

# ***TIFLEX<sup>TM</sup> Hose***

## **General Catalog**



**TIGERS POLYMER CORPORATION**

VISION & CONCEPT

# Customer satisfaction That is our subject.



Agile and strong. Furthermore it has a flexible and powerful physique-----Tiger.

In tribute to the Year of the Tiger in which our company was founded, our company emblem represents a dynamic image of endless development and opening up the future with limitless possibilities.

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# Handling of Hose

To use a hose in more safety and for a longer period, please make sure to read the "Instruction for Use", "Instruction for Plumbing", "Instruction for Hose Storage", "Instruction for Transportation", "Instruction for Maintenance", and "Metal Fixture and Band". We are not responsible for any damage in case customers suffer damage due to non-compliance with the precautions for each item. Please be sure to comply with them.

Our products are developed and manufactured for general industrial applications. Customers are requested to confirm in advance for applications that require safety considerations. Do not use for implanting or injecting into the body, or for applications where some remains or may remain in the body. We do not guarantee the adaptability and safety of these applications. Please be noticed to read the handling precautions carefully before using our products.

## Instruction for Use

- The value of allowable pressure shall be expressed as the maximum allowable pressure when the hose is used at 20 degrees C and bent more than its allowable bending radius. Hoses are not suitable for the usage where nearly the same amount of pressure as the allowable pressure is continuously applied to the hose.
- **Allowable pressure is not the same as maximum working pressure.**  
Use at the following pressure if pressure is continuously applied for a long time.  
(under normal operation pressure)  
F-3, WT, Antistatic W, E, A/R W, WA, A/R E, SF, O/R F type: 1/4 or less of the working pressure  
WS, WR, WR-S, FC, FC-20, WSU, O/R WS type: 2/3 or less of the working pressure  
\*A/R : Abrasion Resistant, \*O/R : Oil Resistant
- Refer to each page of hose for its working pressure. Please note that working pressure differs by size even if hose type is same.
- Hose performance (working pressure, end-of-life period, etc.) is under the influence of ambient temperature, fluid temperature, bending status, combination of metal fixture and band. In case that ambient temperature and fluid temperature are 50°C, working pressure will be about 1/2 compared with that when they are 20°C.  
In addition, at high temperatures exceeding the operating temperature range, metal fittings may come off due to significant deterioration in physical properties, deformation, and softening of the material.
- There are some unusable fluids (acid, alkali, solvent, oil, and chemicals) which affects hose material with swelling or cure phenomenon. Refer to the Chemical Resistance Guide for its availability.  
Use with 1/3 of working pressure even if it is available. Especially, never use hose(s) with high concentration acid/alkali or highly explosive and flammable chemicals. It might severely damage a human body if a hose breaks while in use.
- Hose cannot be used being buried in the ground. It might be damaged by earth pressure or the hose material might be deteriorated by bacteria affection in the ground.
- In case of use at upstroke part of submersible pump, hose might be damaged due to the hammer pressure at the pump down time. Set the pump pressure less than 1/3 of the allowable pressure.
- Handle slowly and take 3 seconds or more for valve opening and closing not to apply hammer pressure. Hose might be broken due to applying hammer pressure.
- Hose might be discolored/hardened or cracked by ozone due to material deterioration by ultraviolet of sunlight or fluorescent light.  
If there is a sign of discolored or cracked hose, exchange it to new one immediately.
- Use hose as a consumable item.
- Never use non-food use hose for food use. You might be punished under the provision of law.  
When using it for drinking water or food, wash it before use. Also, do not immerse hoses or fittings in drinking water or food fluid in the tank. Fluid may remain inside the hose or at the joint, and germs may propagate (adhere).
- Never use hose for medical application.  
You might be punished under the provision of law.
- Do not use hose as pipe for compressed air.  
It might cause an accident by hose burst depending on use conditions. See P.50 for more information on TIFLEX Hinet hoses.
- Please consult us when you use hose for high purity chemical transportation. Component of hose might be eluted into fluid.
- Do not use hose for an application other than specified application (fluid) in this catalog.
- Dispose of used hoses as industrial waste.
- Product containing PVC may generate dioxin when incinerated under 800°C.

## Instruction for Plumbing

- When plumbing hose, please ensure that even in the event of an emergency, the hose does not cause harm to the human body or surrounding equipment.
- Plumb hose with allowance because it can be stretched and contracted by pressure.  
Do not use hose putting in sheathing pipe or side ditch. Hard part of hose might be damaged and water leakage might happen due to the hose stretch. In addition, protect hose with cushion or protection tube, etc. if a hose contacts with equipment(s) or others due to its stretching and contracting, or its swinging.
- Hoses are consumable goods. As a hose is used for a certain period, it gradually deteriorates. Exchange the hose to new one immediately in case there is a defect or the sign.
- In case a hose is used fixing the both ends, use it under 1/2 of working pressure. In such case, bending radius of the hose might be shortened in part and it might be damaged due to stretch by pressure.
- We recommend to use high pressure hose such as WS, WR, WR-S, FC, FC-20, WSU or O/R WS type which can not be stretched so much even under pressure.  
\*O/R : Oil Resistant
- Hose life might be significantly shortened if you use a hose bending it with shorter bending radius than that specified in this catalogue as bending radius.
- In case that hose is used being extremely bended near the metal fixture, the hose life might be significantly shortened. Plumb a hose making 1~2 meters length of straight part near the metal fixture.
- Do not sling a hose horizontally. It might be broken.
- Be careful not to make an impact to a hose and not to be trapped under vehicle or the other heavy load.
- Do not move machine by pulling a hose or do not move machine or vehicle when hose is still connected.

# Handling of Hose

## Instruction for Hose Storage

- Hose should be stored in indoor cool and dark space not to be exposed to direct sunlight or wind and rain. If you store a hose outdoors, it might get discolored or deteriorated by ultraviolet, and rainwater or dust might get into the hose.
- Do not stack hose in piles or do not put heavy load on a hose. Otherwise hose might be deformed.
- Roll a hose with its bending radius or longer, or put it in straight on flat and smooth surface. If hose is extremely bended or stored being put on unlevel surface, it might be deformed.
- Do not store a hose being touched rubber product. Otherwise it might be discolored.
- Store a used hose in a flat place avoiding direct sunlight after removing residues inside of the hose as much as possible and washing.
- Do not remain hose on aisle. It may cause injury by tripping over or stepping.

## Instruction for Transportation

- Do not pull or lug a hose on the ground. It may cause surface damage or hole of hose and shorten hose life.
- Do not throw or impact a hose. It might be broken.
- When sling up a hose, apply multipoint sling up (Avoid one point sling up).

## Instruction for Maintenance

- **Daily Check**  
Perform an appearance check before daily use. In case there is a defect, exchange the hose to a new one immediately, or take measures such as defect removal.  
【1】Appearance Check  
Stop using a hose immediately and exchange it to a new one if following defects are found.  
A. Defect near metal fixture -> Stretch in part, swelling, curve, leakage.  
B. External flaw -> External big flaw, crack in hose hard part, cracks at valley between pitches of hose.  
C. Hose defect -> Crack, deformation, breaking, inner swelling and peeling.  
D. Other marked deterioration -> Marked discolor, hardening, swelling, crack, and etc.
- **【2】Water pressure test**  
Stop using a hose immediately and exchange it to a new one when a regular test value becomes more than 1.5 times of initial value regarding stretch ability of new hose under pressure as criteria.  
Test must be performed under working pressure. High pressure beyond necessity may shorten hose life.
- Test periodically for connection part, coupling part, clamping part and etc. of a hose because they will be loosened during use.
- We are not responsible in case customers suffered damage due to non-compliance with the above items.

## Metal Fixture and Band

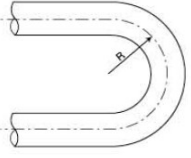
- Outer diameter of the nipple which is inserted in a hose should be sub equal or a little larger than inner diameter of the hose.  
In case OD of a nipple is smaller than ID of a hose, an accident such as water leakage or metal fixture detachment may occur.
- To ensure enough tightness, please read instructions carefully before using commercially available metal fixture or band. Depends on the shape of the fixture or band, working pressure of a hose cannot be maintained or cannot be assembled, so please consult us in advance.
- Please consult us in advance about the fittings you will be providing, just as in the previous section.
- Please note that the pressure resistance of the hose changes depending on the type of band to be tightened, the number of bands, and the tightening force.
- When the material of a nipple or a contact substance is synthetic resin, hose component might move into and the nipple or contact substance might be deteriorated or color might be changed. So please evaluate adequateness enough or consult us.
- Please note that when using a metal fitting such as an outer one for a hose with a reinforcing cord in which the end face of the hose comes into contact with the fluid, when the fluid infiltrates into the reinforcing layer, the specified pressure resistance performance cannot be exerted or the reinforcing cord is deteriorated.

- Precautions regarding static electricity prevention  
The antistatic effect varies depending on the characteristics of powders and granular materials used and the conditions of use.  
Please check before use.  
The purpose of the static electricity prevention capability is to prevent clogging due to the retention of powders and granular materials used and the influence of static electricity generated around the hose. It is not the ability to remove the charge of powders and granular materials used.  
Take measures separately to eliminate static electricity from powders and granular materials used, do not allow hose to come into direct contact with or bring it close to open flames, and never use it near dangerous objects.  
For TIFLEX hose E type, Abrasion resistant E type, WSU type, and GL-E type, be sure to connect the ground wire to the

## Guide for Hose Selection

| Type                                 | Name of Product                       | Diameter (φ) | Fluid / Application                                      | Features                                                                                                                                              |
|--------------------------------------|---------------------------------------|--------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Hose                         | TIFLEX Hose F-3 type                  | 19-200       | Water, muddy water, slurry and etc.                      | Suited for delivery and suction use due to smooth inside/outside surface construction.                                                                |
|                                      | TIFLEX Hose WT type                   | 25-200       |                                                          | Excels in flexibility.                                                                                                                                |
|                                      | TIFLEX Hose WS type                   | 25-350       |                                                          | Heavy duty type of TIFLEX Hose WT type.                                                                                                               |
| Heavy Duty / Abrasion Resistant Hose | TIFLEX Hose WR type                   | 38-300       | Muddy water, sand, gravel, cement, slurry.               | Maximum working pressure: 1.0MPa {10.2kgf/cm <sup>2</sup> } (0.50MPa {5.1kgf/cm <sup>2</sup> } for φ 300)                                             |
|                                      | TIFLEX Hose WR-S type                 | 50-200       |                                                          | Maximum working pressure: 2.0MPa {20.4kgf/cm <sup>2</sup> }                                                                                           |
|                                      | TIFLEX Hose FC type                   | 38/50        | Mortar, cement fluid.                                    | Smooth inside/outside surface construction, excels in heavy duty and abrasion resistance. Maximum working pressure: 1.5MPa {15.3kgf/cm <sup>2</sup> } |
|                                      | TIFLEX Hose FC 20 type                | 50/75        | Mortar, cement fluid.                                    | Smooth inside/outside surface construction, excels in heavy duty and abrasion resistance. Maximum working pressure: 2.0MPa {20.4kgf/cm <sup>2</sup> } |
| Antistatic Hose                      | TIFLEX Hose Antistatic W type         | 25-100       | Plastic material for molding, powders and granules.      | Antistatic type of TIFLEX Hose WT type.                                                                                                               |
|                                      | TIFLEX Hose E type                    | 25-100       |                                                          | Smooth inside/outside surface construction, with grounding wire.                                                                                      |
| Abrasion Resistant Hose              | TIFLEX Hose Abrasion Resistant W type | 38-150       | Dust, slurry and grit.                                   | Excels in abrasion resistance, flexibility at low temperatures.                                                                                       |
|                                      | TIFLEX Hose WA type                   | 38-200       | Dust, slurry and grit.                                   | Excels in heat and abrasion resistance.                                                                                                               |
|                                      | TIFLEX Hose Abrasion Resistant E type | 38-200       | Powders and granules. (Iron powder, sand and etc.)       | Upgraded TIFLEX Hose E type in abrasion resistance.                                                                                                   |
|                                      | TIFLEX Hose WSU type                  | 75-200       | Powders and granules. (Iron powder, sand and etc.)       | Excels in pressure and abrasion resistance.                                                                                                           |
| Food Grade Hose                      | TIFLEX Hose SF type                   | 25-125       | Liquid foods. (Sake, soy sauce, vinegar, soft drinks.)   | Complies with Food Sanitation Law in Japan.                                                                                                           |
| Oilproof Hose                        | TIFLEX Hose Oil Resistant F type      | 25-100       | Mineral oil, plant and animal oil.<br>*Except for foods. | Smooth inside/outside surface construction oilproof hose.                                                                                             |
|                                      | TIFLEX Hose Oil Resistant WS type     | 50-125       | Waste liquid, Waste oil.                                 | Oil Resistant type of TIFLEX Hose WS type.                                                                                                            |
| Non-PVC Hose                         | TIFLEX Ti-Eco Light FF type           | 38-100       | Water, muddy water, slurry, liquid food etc.             | Eco-friendly hose.                                                                                                                                    |
|                                      | TIFLEX Ti-Eco Light WT type           | 38-100       |                                                          | Complies with Food Sanitation Law in Japan.                                                                                                           |
|                                      | TIFLEX Ti-Eco Light Antistatic W type | 25-100       | Water, muddy water, slurry.                              | Eco-friendly hose.                                                                                                                                    |
|                                      | TIFLEX Ti-Eco Light WS type           | 25-100       |                                                          | Eco-friendly hose.                                                                                                                                    |
| Others                               | TIFLEX Hi-Net Hose                    | 4-50         | Water, air, powders and granules.                        | Excels in lightweight and flexibility. Complies with Food Sanitation Law in Japan.                                                                    |

### Key Terms

| <u>Bending Radius</u>                                                                                                                                                                                                                                                  | <u>Allowable Pressure</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <u>Deformation Temperature under Reduced Pressure</u>                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <p>It is minimum usable bending radius which is a distance to the central axis of hose. Hose should not be used with a smaller bending radius than the minimum bending radius.</p>  | <p>It is usable maximum pressure in the range of use from straight pipe to bent pipe with allowable bending radius at 20°C. Please note that the allowable pressure may change depending on service temperature, flexural state, combination of clamp and band. In case that pressure is continuously applied for a long period, hose should be used with less pressure than 1/4 of the allowable value. (2/3 for TIFLEX WS, WR, WR-S, FC, FC-20, WSU, O/R WS type.)<br/>*O/R : Oil Resistant</p> | <p>It is temperature which a straight pipe deforms under reduced pressure at -0.1 MPa/-760mmHg. It is not available temperature limit.</p> |

### ●Comparative table

| Inch | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3  | 4   | 5   | 6   | 8   |
|------|-----|----|-------|-------|----|-------|----|-----|-----|-----|-----|
| Mm   | 19  | 25 | 32    | 38    | 50 | 65    | 75 | 100 | 125 | 150 | 200 |

| Name of Product                       | Working Pressure Range at 20°C for Each Hose |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  |        | Deformation Temperature under Reduced Pressure (°C) | Service Temperature Range (°C) | Page |
|---------------------------------------|----------------------------------------------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|----|------------------------|--|--------|-----------------------------------------------------|--------------------------------|------|
|                                       | -0.1                                         | 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1  | 1.5 | 2  | Mpa                    |  |        |                                                     |                                |      |
|                                       | -1                                           | 0 | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10 | 15  | 20 | (kgf/cm <sup>3</sup> ) |  |        |                                                     |                                |      |
| TIFLEX Hose F-3 type                  |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 45-70  | -10~50                                              | 11                             |      |
| TIFLEX Hose WT type                   |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 45-60  | -10~50                                              | 11                             |      |
| TIFLEX Hose WS type                   |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 45-70  | -10~50                                              | 12                             |      |
| TIFLEX Hose WR type                   |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 50-65  | -10~50                                              | 14                             |      |
| TIFLEX Hose WR-S type                 |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 65     | -10~50                                              | 15                             |      |
| TIFLEX Hose FC type                   |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 60     | -10~50                                              | 16                             |      |
| TIFLEX Hose FC 20 type                |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 60     | -10~50                                              | 16                             |      |
| TIFLEX Hose Antistatic W type         |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 50-60  | -10~50                                              | 18                             |      |
| TIFLEX Hose E type                    |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 55-60  | -10~50                                              | 19                             |      |
| TIFLEX Hose Abrasion Resistant W type |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 50-60  | -10~50                                              | 21                             |      |
| TIFLEX Hose WA type                   |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 90-110 | -20~80                                              | 21                             |      |
| TIFLEX Hose Abrasion Resistant E type |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 45-60  | -10~50                                              | 22                             |      |
| TIFLEX Hose WSU type                  |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 50-60  | -10~50                                              | 22                             |      |
| TIFLEX Hose SF type                   |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 55-70  | -10~50                                              | 24                             |      |
| TIFLEX Hose Oil Resistant F type      |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 60-70  | -10~50                                              | 24                             |      |
| TIFLEX Hose Oil Resistant WS type     |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 55-65  | -10~50                                              | 25                             |      |
| TIFLEX Ti-Eco Light FF type           |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 60-95  | -10~50                                              | 45                             |      |
| TIFLEX Ti-Eco Light WT type           |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 70     | -10~50                                              | 45                             |      |
| TIFLEX Ti-Eco Light Antistatic W type |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 70     | -10~50                                              | 46                             |      |
| TIFLEX Ti-Eco Light WS type           |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | 90     | -10~50                                              | 46                             |      |
| TIFLEX Hi-Net Hose                    |                                              |   |     |     |     |     |     |     |     |     |     |    |     |    |                        |  | -      | -10~60                                              | 50                             |      |

Please refer to the posted pages for details on each hose.

The allowable pressure and deformation Temperature under Reduced Pressure are guidelines for the performance of the hose alone. It depends on the diameter, metal fittings, fixing method, and usage conditions. Please refer to the posted pages for details.

\*N/A : Not Applicable

### Conversion of Pressure Unit

$$1\text{MPa} = 10.1972 \text{ kgf/cm}^2$$

$$1\text{MPa} = 9.86923 \text{ atm}$$

$$1\text{MPa} = 101972 \text{ mmAq}$$

$$1\text{MPa} = 7500.62 \text{ mmHg}$$

$$1\text{MPa} = 1000\text{KPa} = 1000000\text{Pa}$$

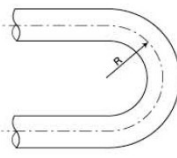
The contents of this catalog are subject to change without notice due to improvements or other reasons. These descriptions of this catalog shall be as of November 1, 2023.

# Guide for Hose Selection

| Type                      | Name of Product                              | Diameter | Fluid / Application                                                                | Features                                                                                                                      |
|---------------------------|----------------------------------------------|----------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| General Hose              | TIFLEX Hose GL type                          | 25-300   | Air, wood powder, dust.                                                            | Little airflow loss due to smooth inside surface.                                                                             |
|                           | TIFLEX Hose GL-2 type                        | 50-150   |                                                                                    | Lightweight type of TIFLEX Hose GL type.                                                                                      |
|                           | TIFLEX Hose N type                           | 16-400   |                                                                                    | Using metallic wire for reinforcement.                                                                                        |
| Abrasion Resistant Hose   | TIFLEX Hose Abrasion Resistant GL type       | 38-200   | Powders and granules. (Iron powder, aluminum powder, metallic powder,              | One of TIFLEX Hose GL types, excels in abrasion resistance and heat resistance.                                               |
| Oilproof Hose             | TIFLEX Hose Oil Resistant GL type            | 38-200   | For recovery of oil mist.                                                          | Using oil resistant special material (soft part of hose) which is hardly hardened against lubricant oil, cutting oil and etc. |
| Antistatic Hose           | TIFLEX Hose GL-E type                        | 38-150   | Dust collection for wood working machine, powder and granules.                     | One of TIFLEX Hose GL types, using grounding wire.                                                                            |
|                           | TIFLEX Hose GL-ST type                       | 25-300   |                                                                                    | One of TIFLEX Hose GL types, transparent and antistatic.                                                                      |
| General Hose              | TIFLEX Hose P/P2 type                        | 38-300   | Air. (include hot air)                                                             | Stretchable.                                                                                                                  |
|                           | TIFLEX Hose F/R P type                       | 38-300   |                                                                                    | Endowed with flame retardancy which is equivalent to UL94-HB.                                                                 |
| Spot Air Conditioner Hose | TIFLEX Hose A type                           | 55-300   | For spot cooler.                                                                   | Freely stretchable and freely fixable.                                                                                        |
| Heat Resistant Hose       | TIFLEX Hose AP type                          | 38-200   | For air.                                                                           | Continuous usable temperature is 100°C or lower. Have airtightness.                                                           |
|                           | TIFLEX Hose V series PAL type                | 50-300   | For air conditioning.                                                              | Continuous usable temperature is 130°C or lower.                                                                              |
|                           | TIFLEX Hose V series AG type                 | 50-300   | For air conditioning and hot air generator & circulation system.                   | Continuous usable temperature is 180°C or lower.                                                                              |
|                           | TIFLEX Hose V series FP type                 | 50-300   | For air conditioning and hot air generator & circulation system.                   | Continuous usable temperature is 250°C or lower.                                                                              |
|                           | TIFLEX Hose V series SUS type                | 50-300   | For pollution control equipment and burning equipment.                             | Continuous usable temperature is 400°C or lower.                                                                              |
| Silicone Rubber Hose      | TIFLEX Silicone Duct Hose SRDH TS type       | 25-254   | For air conditioning.                                                              | Heat resistant duct hose with air tightness.                                                                                  |
|                           | TIFLEX Silicone Duct Hose SRDH GS type       | 25-254   | For air conditioning.                                                              | Heat resistant duct hose with air tightness.                                                                                  |
|                           | TIFLEX Silicone Rubber Cleaner Hose TSC type | 25-254   | For suction exhaust gas of solvent and etc.                                        | Heat resistant Cleaner hose with air tightness.                                                                               |
|                           | TIFLEX Silicone Rubber Cleaner Hose GSC type | 25-254   | For suction exhaust gas of solvent and etc.                                        | Heat resistant Cleaner hose with air tightness.                                                                               |
|                           | TIFLEX Silicone Rubber Vacuum Hose TSV type  | 25-254   | Use for suction which needs abrasion resistance.                                   | Heat resistant Vacuum hose with air tightness.                                                                                |
|                           | TIFLEX Silicone Rubber Vacuum Hose GSV type  | 25-254   | Use for suction which needs abrasion resistance.                                   | Heat resistant Vacuum hose with air tightness.                                                                                |
|                           | TIFLEX Silicone Rubber Suction Hose TSH type | 25-165   | Use for pressure feeding and suction of the liquid and powder / granular material. | Heat resistant Suction hose with air tightness.                                                                               |
|                           | TIFLEX Silicone Rubber Suction Hose GSH type | 25-165   | Use for pressure feeding and suction of the liquid and powder / granular material. | Heat resistant Suction hose with air tightness.                                                                               |
| Non-PVC Hose              | Ti-Ecolight GL type                          | 32-100   | For air, wood powder, dust, food.                                                  | Eco-friendly hose. Complies with Food Sanitation Law.                                                                         |
| Flame Retardant Hose      | TIFLEX NH-1 type                             | 100-400  | For air conditioning.                                                              | Excels in stretchability, bendability, and heat insulating properties. Qualified product as flame retardant material.         |

\*F/R : Flame Retardant

## Key Terms

| <u>Bending Radius</u>                                                                                                                                                                                                                                                  | <u>Allowable Pressure</u>                                                                                                                                                                                                                                                                                                                            | <u>Allowable Reduced Pressure</u>                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>It is minimum usable bending radius which is a distance to the central axis of hose. Hose should not be used with a smaller bending radius than the minimum bending radius.</p>  | <p>It is usable maximum pressure in the range of use from straight pipe to bent pipe with allowable radius at 20°C. Please note that the allowable pressure may change depending on service temperature, flexural state, combination of clamp and band. For general use, hose should be used with less pressure than 1/4 of the allowable value.</p> | <p>It is maximum negative pressure which can be applied to a hose at 20°C. Hoses can not be used with any more negative pressure than that. In addition, the allowable reduced pressure gets lower in case that the service temperature becomes higher.</p> |

### ●Comparative table

| Inch | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3  | 4   | 5   | 6   | 8   |
|------|-----|----|-------|-------|----|-------|----|-----|-----|-----|-----|
| mm   | 19  | 25 | 32    | 38    | 50 | 65    | 75 | 100 | 125 | 150 | 200 |

| Name of Product                              | Working Pressure Range at 20°C for Each Hose |       |   |      |      |      |                           |  | Service Temperature Range (°C) | Cuff                         | Page |
|----------------------------------------------|----------------------------------------------|-------|---|------|------|------|---------------------------|--|--------------------------------|------------------------------|------|
|                                              | -0.10                                        | -0.05 | 0 | 0.05 | 0.10 | 0.50 | 1.0 MPa                   |  |                                |                              |      |
|                                              | -1.0                                         | -0.5  | 0 | 0.5  | 1.0  | 5.0  | 10.0(kg/cm <sup>2</sup> ) |  |                                |                              |      |
| TIFLEX Hose GL type                          |                                              |       |   |      |      |      |                           |  | -10~50                         | Available                    | 27   |
| TIFLEX Hose GL-2 type                        |                                              |       |   |      |      |      |                           |  | -10~50                         | Available                    | 27   |
| TIFLEX Hose N type                           |                                              |       |   |      |      |      |                           |  | -10~50                         | Available                    | 28   |
| TIFLEX Hose Abrasion Resistant GL type       |                                              |       |   |      |      |      |                           |  | -30~80                         | Available<br>(Only g38, g50) | 29   |
| TIFLEX Hose Oil Resistant GL type            |                                              |       |   |      |      |      |                           |  | -10~50                         | N/A                          | 29   |
| TIFLEX Hose GL-E type                        |                                              |       |   |      |      |      |                           |  | -10~50                         | Available                    | 30   |
| TIFLEX Hose GL-ST type                       |                                              |       |   |      |      |      |                           |  | -10~50                         | Available                    | 31   |
| TIFLEX Hose P/P2 type                        |                                              |       |   |      |      |      |                           |  | -20~80                         | Available                    | 32   |
| TIFLEX Hose Flame Retardant P type           |                                              |       |   |      |      |      |                           |  | -20~80                         | Available                    | 33   |
| TIFLEX Hose A type                           |                                              |       |   |      |      |      |                           |  | -                              | Available                    | 34   |
| TIFLEX Hose AP type                          |                                              |       |   |      |      |      |                           |  | -20~100                        | N/A                          | 36   |
| TIFLEX Hose V series PAL type                |                                              |       |   |      |      |      |                           |  | -20~130                        | N/A                          | 37   |
| TIFLEX Hose V series AG type                 |                                              |       |   |      |      |      |                           |  | -20~180                        | N/A                          | 37   |
| TIFLEX Hose V series FP type                 |                                              |       |   |      |      |      |                           |  | -20~250                        | N/A                          | 38   |
| TIFLEX Hose V series SUS type                |                                              |       |   |      |      |      |                           |  | -20~400                        | N/A                          | 38   |
| TIFLEX Silicone Duct Hose SRDH TS type       |                                              |       |   |      |      |      |                           |  | -50~150                        | Selectable                   | 40   |
| TIFLEX Silicone Duct Hose SRDH GS type       |                                              |       |   |      |      |      |                           |  | -50~200                        | Selectable                   | 40   |
| TIFLEX Silicone Rubber Cleaner Hose TSC type |                                              |       |   |      |      |      | 0.5                       |  | -50~150                        | Available                    | 41   |
| TIFLEX Silicone Rubber Cleaner Hose GSC type |                                              |       |   |      |      |      | 0.5                       |  | -50~200                        | Available                    | 41   |
| TIFEX Silicone Rubber Vacuum Hose TSV type   |                                              |       |   |      |      |      | 0.7                       |  | -50~150                        | Available                    | 42   |
| TIFLEX Silicone Rubber Vacuum Hose GSV type  |                                              |       |   |      |      |      | 0.7                       |  | -50~200                        | Available                    | 42   |
| TIFLEX Silicone Rubber Suction Hose TSH type |                                              |       |   |      |      |      | 0.9                       |  | -50~150                        | Available                    | 43   |
| TIFLEX Silicone Rubber Suction Hose GSH type |                                              |       |   |      |      |      | 0.9                       |  | -50~200                        | Available                    | 43   |
| Ti-Ecolight GL type                          |                                              |       |   |      |      |      |                           |  | -20~50                         | Available                    | 47   |
| TIFLEX NH-1 type                             |                                              |       |   |      |      |      |                           |  | -20~80                         | N/A                          | 49   |

Please refer to the posted pages for details on each hose.

The allowable pressure and deformation Temperature under Reduced Pressure are guidelines for the performance of the hose alone.

It depends on the diameter, metal fittings, fixing method, and usage conditions. Please refer to the posted pages for details.

\*N/A : Not Applicable

### Conversion of Pressure Unit

$$1\text{MPa} = 10.1972 \text{ kgf/cm}^2$$

$$1\text{MPa} = 9.86923 \text{ atm}$$

$$1\text{MPa} = 101972 \text{ mmAq}$$

$$1\text{MPa} = 7500.62 \text{ mmHg}$$

$$1\text{MPa} = 1000\text{KPa} = 1000000\text{Pa}$$

The contents of this catalog are subject to change without notice due to improvements or other reasons.  
These descriptions of this catalog shall be as of November 1, 2023.

# General Hoses

*Reliable items that emphasize the basic properties required for hoses. These are used in transportation systems in a wide range of industrial fields.*

# TIFLEX™ Hose F-3 type

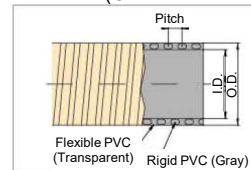
## Features

- Transparent PVC making it possible to confirm the contents.
- Light in weight and easy to bend making handling easy.
- Suited for suction and delivery use.

Hose



Structure (Cross-Section View)



## Applications

- Suction and draining of agriculture and civil engineering work.

Sizes and properties (F3-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|-----------------------------|-------------------|-----------------|
| 19               | 19.0±0.5  | 24.5      | 6.0        | 0.60 [6.1]                                                               | 70                                           | 115                         | 220               | 20, 50          |
| 25               | 25.4±0.5  | 30.4      | 6.0        | 0.50 [5.1]                                                               | 65                                           | 275                         | 280               |                 |
| 32               | 32.0±0.5  | 38.0      | 6.5        | 0.45 [4.6]                                                               | 65                                           | 375                         | 400               |                 |
| 38               | 38.1±0.5  | 44.0      | 7.0        | 0.40 [4.1]                                                               | 60                                           | 475                         | 529               |                 |
| 50               | 50.8±1.0  | 58.0      | 8.0        | 0.30 [3.1]                                                               | 60                                           | 610                         | 790               |                 |
| 65               | 63.5±1.0  | 72.2      | 8.5        | 0.30 [3.1]                                                               | 55                                           | 800                         | 1,130             |                 |
| 75               | 76.2±1.0  | 85.1      | 9.0        | 0.25 [2.5]                                                               | 55                                           | 1,360                       | 1,440             | 20, (50)        |
| 90               | 89.0±1.0  | 99.5      | 9.5        | 0.25 [2.5]                                                               | 55                                           | 1,400                       | 1,945             |                 |
| 100              | 101.6±1.5 | 112.6     | 10.0       | 0.25 [2.5]                                                               | 55                                           | 1,450                       | 2,305             | 20, 50          |
| 125              | 127.0±1.5 | 139.5     | 11.0       | 0.25 [2.5]                                                               | 50                                           | 2,500                       | 3,100             | 20              |
| 150              | 152.4±1.5 | 167.5     | 13.0       | 0.25 [2.5]                                                               | 50                                           | 2,900                       | 4,280             | 10, 20          |
| 200              | 203.0±1.5 | 221.5     | 17.2       | 0.20 [2.0]                                                               | 45                                           | 3,000                       | 7,270             |                 |

( ) is custom-made product.

\* For the hose elongation rate due to pressure, please refer to P69.

\* For the temperature dependence of the allowable pressure, please refer to P70.

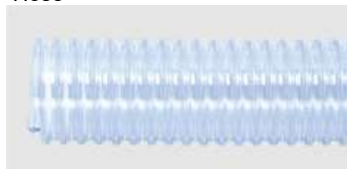
# TIFLEX™ Hose WT type

\* WT type is right-handed. (However, following \* are left-handed.)

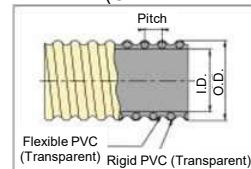
## Features

- Spiral shape of outside makes it affluent in flexibility.
- Transparent making it possible to confirm the contents.
- Suited for suction use.

Hose



Structure (Cross-Section View)



## Applications

- Suction and draining of agriculture and civil engineering work.

Sizes and properties (FF-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|-----------------------------|-------------------|-----------------|
| 25               | 25.0±0.5  | 31.6      | 7.5        | 0.30 [3.1]                                                               | 60                                           | 70                          | 280               | 20, 50          |
| 32               | 32.0±0.5  | 39.0      | 8.5        | 0.30 [3.1]                                                               | 60                                           | 80                          | 330               |                 |
| 38               | 38.0±0.5  | 46.2      | 9.0        | 0.30 [3.1]                                                               | 60                                           | 100                         | 455               |                 |
| (* 48.6)         | 49.0±0.5  | 61.7      | 11.0       | 0.25 [2.5]                                                               | 55                                           | 110                         | 710               |                 |
| 50               | 50.6±1.0  | 59.8      | 10.0       | 0.25 [2.5]                                                               | 55                                           | 120                         | 660               |                 |
| (* 60.5)         | 60.5±1.0  | 74.0      | 12.0       | 0.25 [2.5]                                                               | 55                                           | 140                         | 950               |                 |
| 65               | 63.5±1.0  | 74.1      | 14.0       | 0.25 [2.5]                                                               | 55                                           | 150                         | 1,040             |                 |
| 75               | 76.4±1.0  | 88.8      | 15.0       | 0.25 [2.5]                                                               | 55                                           | 200                         | 1,355             |                 |
| 90               | 88.9±1.0  | 104.3     | 16.0       | 0.25 [2.5]                                                               | 55                                           | 250                         | 2,060             |                 |
| 100              | 101.6±1.5 | 117.2     | 16.5       | 0.20 [2.0]                                                               | 55                                           | 300                         | 2,480             |                 |
| (* 115)          | 115.0±1.5 | 132.0     | 17.0       | 0.20 [2.0]                                                               | 55                                           | 350                         | 2,500             | 20              |
| 125              | 127.0±1.5 | 143.0     | 16.5       | 0.15 [1.5]                                                               | 55                                           | 400                         | 2,855             |                 |
| 150              | 152.4±1.5 | 173.6     | 22.0       | 0.15 [1.5]                                                               | 50                                           | 550                         | 4,605             |                 |
| (200)            | 203.7±1.5 | 229.7     | 23.0       | 0.10 [1.0]                                                               | 45                                           | 1,000                       | 8,200             | 10, 20          |

( ) are custom-made products.

# TIFLEX™ Hose WS type

\* WS type is right-handed.

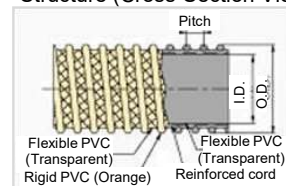
## Features

- Heavy duty type of WT type.
- Excels in pressure resistance due to reinforcement cord.
- Light in weight and excels in flexibility.
- Suited for delivery and suction use.

Hose



Structure (Cross-Section View)



## Applications

- Suction and draining for civil engineering work, etc.

Sizes and properties (WS-□)

| Nominal Dia. (φ) | I.D. (mm)                  | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|----------------------------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|-----------------------------|-------------------|-----------------|
| 25               | 25.4±0.5                   | 34.4      | 8.0        | 0.50 [5.1]                                                               | 70                                           | 90                          | 320               | 50              |
| 32               | 31.8±0.5                   | 42.0      | 9.0        | 0.50 [5.1]                                                               | 70                                           | 120                         | 440               |                 |
| 38               | 38.1±0.5                   | 49.5      | 9.0        | 0.50 [5.1]                                                               | 65                                           | 150                         | 630               | 20, 50          |
| 50               | 50.8±1.0                   | 62.8      | 10.0       | 0.50 [5.1]                                                               | 65                                           | 200                         | 860               |                 |
| 65               | 63.5±1.0                   | 78.0      | 14.3       | 0.50 [5.1]                                                               | 60                                           | 250                         | 1,230             |                 |
| 75               | 76.0±1.0                   | 90.8      | 15.1       | 0.50 [5.1]                                                               | 60                                           | 350                         | 1,410             |                 |
| 100              | 101.6±1.5                  | 119.0     | 16.5       | 0.50 [5.1]                                                               | 60                                           | 500                         | 2,350             | 20, (50)        |
| 125              | 127.0±1.5                  | 151.0     | 22.0       | 0.50 [5.1]                                                               | 55                                           | 600                         | 3,885             |                 |
| 150              | 152.4 <sup>+2.0/-1.5</sup> | 180.0     | 24.0       | 0.50 [5.1]                                                               | 55                                           | 750                         | 5,130             | 10, 20          |
| 200              | 203.0 <sup>+2.0/-1.5</sup> | 235.0     | 28.0       | 0.50 [5.1]                                                               | 50                                           | 1,200                       | 7,950             |                 |
| 250              | 254.0 <sup>+3.0/-2.0</sup> | 295.0     | 32.0       | 0.25 [2.5]                                                               | 50                                           | 1,800                       | 11,800            | 5               |
| (300)            | 304.8 <sup>+3.0/-2.0</sup> | 350.0     | 34.0       | 0.25 [2.5]                                                               | 45                                           | 2,100                       | 19,000            |                 |
| (350)            | 360.0±3.0                  | 407.0     | 37.0       | 0.25 [2.5]                                                               | 45                                           | 2,500                       | 21,600            |                 |

( ) are custom-made products.

Working pressure is different depending on fitting method of metal fixture and band.

(Thorough care should be observed when fitting at work sites.)

\* For the hose elongation rate due to pressure , please refer to P69.

\* For the temperature dependence of the allowable pressure, please refer to P70.

\* For R-power band tightening torque, please refer to P70.



WS type, Outer Socket Caulking



WS type, R-Power Band Tightening



# **Heavy Duty / Abrasion Resistant Hoses**

*Usable when pressure resistance is necessary.  
In addition, these hoses excel in durability  
compared with general plastic hoses by use of  
special material for abrasion resistance.*

# TIFLEX™ Hose WR type \* WR type is right-handed.

## Features

- Excels in pressure resistance with its working pressure 1.0MPa {10.2kgf/cm<sup>2</sup>} (In case of outer tube caulking or inner tube expansion metal fitting.)
- Excels in abrasion resistance by use of special material for inner layer.
- Long lengths available making efficiency upgrading of piping work possible.

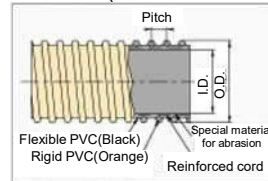
## Applications

- Suction and discharge of muddy water such as muddy water shield and reverse.
- Muddy water suction and pressure discharge in civil engineering work.
- Suction and discharge in case that pressure resistance and abrasion resistance are required.

Hose



Structure (Cross-Section View)



Dimension and property (WR-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Allowable Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|---------------------------------------|-------------------|-----------------|
| 38               | 38.1±0.5  | 52.3      | 9.0        | 1.00 [10.2]                                                              | 65                                           | 400                                   | 960               | 50              |
| 50               | 50.8±1.0  | 66.8      | 10.0       | 1.00 [10.2]                                                              | 65                                           | 450                                   | 1,300             | 20, 50          |
| 65               | 63.5±1.0  | 81.8      | 14.3       | 1.00 [10.2]                                                              | 65                                           | 550                                   | 1,700             |                 |
| 75               | 76.2±1.0  | 97.0      | 15.1       | 1.00 [10.2]                                                              | 65                                           | 750                                   | 2,200             |                 |
| 100              | 101.6±1.5 | 128.0     | 16.5       | 1.00 [10.2]                                                              | 65                                           | 1,250                                 | 4,180             | 20, (50)        |
| 125              | 127.0±2.0 | 156.1     | 22.0       | 1.00 [10.2]                                                              | 60                                           | 1,500                                 | 5,320             |                 |
| 150              | 152.4±2.0 | 187.0     | 24.0       | 1.00 [10.2]                                                              | 60                                           | 2,000                                 | 7,260             |                 |
| 200              | 203.0±2.0 | 245.0     | 25.0       | 1.00 [10.2]                                                              | 60                                           | 2,250                                 | 11,800            | 10, 20          |
| (250)            | 254.0±2.5 | 300.0     | 27.0       | 1.00 [10.2]                                                              | 50                                           | 4,000                                 | 18,230            | 5               |
| (300)            | 304.8±2.5 | 351.0     | 28.0       | 0.50 [5.1]                                                               | 50                                           | 5,000                                 | 21,320            |                 |

( ) are custom-made products.

Working pressure is different depending on fitting method of metal fixture and band.

(Thorough care should be observed when fitting at work sites.)

Working pressure by fitting method of WR type and metal fixture.

Unit: MPa {kgf/cm<sup>2</sup>}

| Nominal Dia. (φ)     | 75 or less  | 100         | 125         | 150         | 200         | 250         | 300        |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|
| Fitting Method       |             |             |             |             |             |             |            |
| R-Power Band Welding | 1.00 [10.2] | 1.00 [10.2] | 1.00 [10.2] | 0.7 [7.1]   | 0.50 [5.1]  | 0.50 [5.1]  | 0.30 [3.1] |
| Outer Tube Caulking  | 1.00 [10.2] | 1.00 [10.2] | 1.00 [10.2] | 1.00 [10.2] | 1.00 [10.2] | —           | —          |
| Inner Tube Expansion | 1.00 [10.2] | 1.00 [10.2] | —           | 1.00 [10.2] | 1.00 [10.2] | 1.00 [10.2] | 0.50 [5.1] |

\* For the hose elongation rate due to pressure, please refer to P69.

\* For the temperature dependence of the allowable pressure, please refer to P70.

\* For R-power band tightening torque, please refer to P70.



WR type, Outer Socket Caulking



WR type, R-Power Band Tightening and Welding

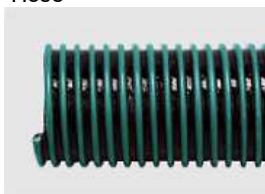


# TIFLEX™ Hose WR-S type

(Custom-Made-Products)

\* WR-S type is right-handed.

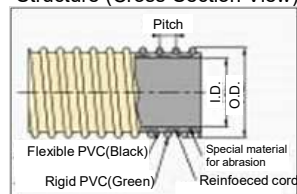
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Working pressure is 2.0MPa {20.4kgf/cm<sup>2</sup>}. (in the case of inner tube expansion metal fitting.)
- Excels in abrasion resistance by use of special material for inner layer.
- Long lengths available making efficiency upgrading of piping work possible.

## Applications

- Suction and discharge of muddy water such as muddy water shield and reverse. (Especially suited for sludge removal piping of shield.)
- Muddy water suction and pressure discharge in civil engineering work.
- Suction and pressure discharge of sand, gravel and sludge.
- Suction and discharge in case that pressure resistance and abrasion resistance are required.

Sizes and properties (WRS-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|-----------------------------|-------------------|-----------------|
| 50               | 50.8±1.0  | 70.0      | 10.0       | 2.00 [20.4]                                                              | 65                                           | 650                         | 1,580             | 20, 50          |
| 75               | 76.2±1.0  | 101.0     | 15.1       | 2.00 [20.4]                                                              | 65                                           | 1,100                       | 3,000             |                 |
| 100              | 101.6±1.5 | 134.0     | 16.5       | 2.00 [20.4]                                                              | 65                                           | 1,500                       | 5,200             |                 |
| 150              | 152.4±1.5 | 192.5     | 24.0       | 2.00 [20.4]                                                              | 65                                           | 2,050                       | 9,400             | 20              |
| 200              | 203.0±2.0 | 250.0     | 25.0       | 2.00 [20.4]                                                              | 65                                           | 3,250                       | 14,500            | 10              |

The metal fitting shall consist of an inner tube expansion system so that the hose thoroughly exhibits its heavy duty performance.

\* For the hose elongation rate due to pressure , please refer to P69.

# TIFLEX™ Hose FC type (Mortar Hose)

\* FC type is right-handed.

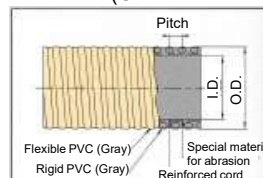
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Excels in pressure resistance due to low stretchability under pressure.
- Excels in abrasion resistance.
- Fluid can flow smoothly because inner surface is flat and smooth by use of inner tube expansion metal fitting.  
(In the case that hose and fixture are fitted by us.)

Sizes and properties (FC-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Allowable Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|---------------------------------------|-------------------|-----------------|
| (38)             | 38.5±1.0  | 52.0      | 9.0        | 1.50 [15.3]                                                              | 60                                           | 500                                   | 1,180             | 20, 50          |
| 50               | 51.0±1.0  | 65.0      | 10.5       | 1.50 [15.3]                                                              | 60                                           | 700                                   | 1,500             |                 |

( ) is custom-made product.

\* For the hose elongation rate due to pressure , please refer to P69.

## Applications

- Pressure discharge of mortar at shield construction.
- Pressure discharge of high viscosity substance.

# TIFLEX™ Hose FC 20 type(Mortar Hose)

\* FC 23 type is right-handed.

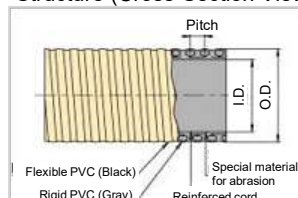
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Excels in pressure resistance due to low stretchability under pressure.
- Excels in abrasion resistance.
- Fluid can flow smoothly because inner surface is flat and smooth by use of inner tube expansion metal fitting  
(In the case that hose and fixture are fitted by us.)

Sizes and properties (FC20-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Allowable Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|---------------------------------------|-------------------|-----------------|
| 50               | 51.0±1.0  | 67.0      | 10.5       | 2.00 [20.4]                                                              | 60                                           | 700                                   | 1,760             | 20, 50          |
| 75               | 76.5±1.0  | 96.0      | 15.0       | 2.00 [20.4]                                                              | 60                                           | 1,200                                 | 3,000             |                 |

\* For the hose elongation rate due to pressure , please refer to P69.

- FC type with an enhanced allowable pressure to 2.0Mpa [20.4kgf / cm<sup>2</sup>].

## Applications

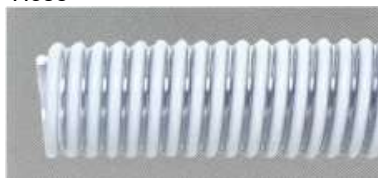
- Pressure discharge of mortar at shield construction.
- Pressure discharge of high viscosity substance.

# Antistatic Hoses

*Have a beneficial effect on antistatic in  
transportation of powder, grain, and plastic pellet.*

# TIFLEX™ Hose Antistatic W type

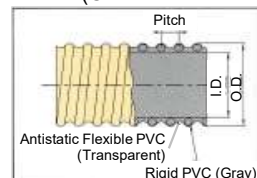
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Excels in static prevention effects by use of anti-static build-up PVC.
- Transparent making it possible to confirm the contents.

## Applications

- Conveying of plastic pellets.
- Conveying of powders and grains.

Sizes and properties (W[D]-□)

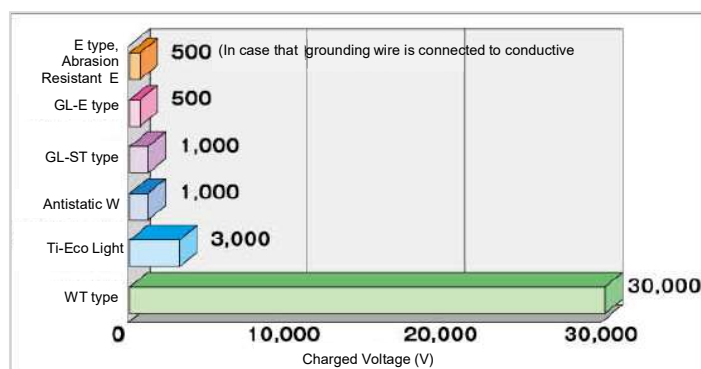
| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp.<br>(-0.1MPa/-<br>760mmHg)<br>(°C) | Bending Radius<br>(mm or more) | Ref. Weight<br>(g/m) | Std. Length<br>(m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|----------------------|--------------------|
| 25               | 25.0±0.5  | 31.8      | 7.6        | 0.30 [3.1]                                                               | 60                                                  | 70                             | 270                  | 20, 50             |
| 32               | 32.0±0.5  | 40.5      | 8.0        | 0.25 [2.5]                                                               | 55                                                  | 80                             | 420                  |                    |
| 38               | 38.1±0.5  | 46.5      | 10.0       | 0.25 [2.5]                                                               | 55                                                  | 100                            | 570                  |                    |
| (45)             | 46.0±1.0  | 55.0      | 10.0       | 0.25 [2.5]                                                               | 50                                                  | 120                            | 840                  |                    |
| 48.6             | 49.0±1.0  | 58.0      | 11.0       | 0.25 [2.5]                                                               | 50                                                  | 120                            | 890                  |                    |
| 50               | 50.8±1.0  | 62.0      | 11.0       | 0.25 [2.5]                                                               | 50                                                  | 120                            | 940                  |                    |
| 60               | 60.5±1.0  | 72.0      | 12.0       | 0.25 [2.5]                                                               | 50                                                  | 150                            | 980                  |                    |
| 65               | 63.5±1.0  | 76.5      | 14.5       | 0.25 [2.5]                                                               | 50                                                  | 150                            | 1,300                |                    |
| 75               | 76.2±1.0  | 90.0      | 15.0       | 0.20 [2.0]                                                               | 50                                                  | 200                            | 1,650                | 20, (50)           |
| (90)             | 89.0±1.0  | 104.0     | 16.5       | 0.15 [1.5]                                                               | 50                                                  | 250                            | 2,100                | 20, 50             |
| (100)            | 101.6±1.5 | 117.0     | 16.5       | 0.15 [1.5]                                                               | 50                                                  | 300                            | 2,300                |                    |

( ) are custom-made products.



## Antistatic Effect

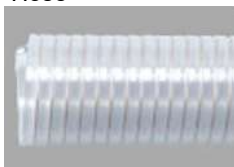
Measured each maximum voltage which is charged to φ38mm hoses after rigid PVC pellets were conveyed.



These are not standard values, but test values.

# TIFLEX™ Hose E type

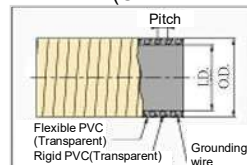
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Excels in antistatic effect by use of grounding wire.
- Transparent making it possible to confirm the contents.
- Suited for delivery use.

## Applications

- Conveying of plastic pellets.
- Conveying of powders and grains.

Sizes and properties (E-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp.<br>(-0.1MPa/-760mmHg)<br>(°C) | Bending Radius<br>(mm or more) | Ref. Weight<br>(g/m) | Std. Length<br>(m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|-------------------------------------------------|--------------------------------|----------------------|--------------------|
| (25)             | 25.4±0.5  | 33.3      | 6.0        | 0.50 [5.1]                                                               | 60                                              | 210                            | 455                  | 50                 |
| (32)             | 32.0±1.0  | 40.5      | 6.5        | 0.50 [5.1]                                                               | 60                                              | 320                            | 615                  |                    |
| 38               | 38.1±1.0  | 46.8      | 7.0        | 0.50 [5.1]                                                               | 60                                              | 340                            | 700                  | 20, 50             |
| (45)             | 44.2±1.0  | 55.0      | 7.8        | 0.45 [4.6]                                                               | 60                                              | 400                            | 900                  | 50                 |
| 48.6             | 49.3±1.0  | 58.5      | 8.0        | 0.40 [4.1]                                                               | 60                                              | 430                            | 967                  |                    |
| 50               | 50.8±1.0  | 61.0      | 8.0        | 0.40 [4.1]                                                               | 60                                              | 450                            | 1,100                | 20, 50             |
| 60               | 61.2±1.0  | 72.0      | 8.0        | 0.40 [4.1]                                                               | 60                                              | 520                            | 1,320                |                    |
| (65)             | 63.5±1.0  | 75.4      | 8.5        | 0.40 [4.1]                                                               | 60                                              | 560                            | 1,630                |                    |
| (75)             | 76.2±1.5  | 88.5      | 9.0        | 0.40 [4.1]                                                               | 55                                              | 730                            | 1,840                |                    |
| (90)             | 89.0±1.5  | 103.0     | 9.5        | 0.30 [3.1]                                                               | 55                                              | 1,000                          | 2,180                |                    |
| (100)            | 101.6±1.5 | 116.0     | 10.0       | 0.30 [3.1]                                                               | 55                                              | 1,100                          | 2,800                | 20, 50             |

( ) are custom-made products.

\* Ground connection is necessary.

\* For antistatic effects, please refer to P18.

\* Thorough attention should be placed in abrasion of the inner surface by reason that fragments of the grounding wire will get mixed into the conveyed matter when the grounding wire becomes exposed by abrasion of the inner surface during use of the E type for which reason the hose should be replaced with a new hose beforehand.

## Pulling out method of copper wire for E type & Antistatic E type

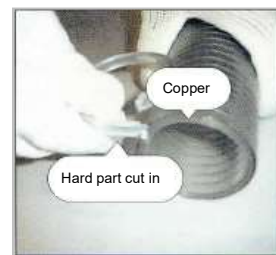
1.

Apply a knife along the hose rigid part and cut the soft part. At this time, make sure that copper wire remains at the edge face of hose.



2.

After the cut of required length of hose soft part for pulling out copper wire, cut in hose rigid part at around of nick end with a knife, and off the nicked part.



3.

Make cut into edge face of the hose along copper wire. Be careful not to cut yourself with a knife.



4.

Pull out the copper wire.



# Abrasion Resistant Hoses

*Excels in durability compared with general plastic hoses by use of abrasion resistant special materials.*

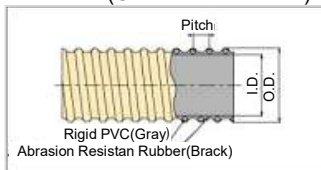
# TIFLEX™ Hose Abrasion Resistant W type

\* Abrasion Resistant W type is right-handed.

Hose



Structure (Cross-Section View)



## Features

- Excels in abrasion resistance more than three times that of the TIFLEX™ hose WT type as material of wear-resistant rubber. (According to the results of the spray wear test conducted by our company)
- Excels in conductivity and antistatic effect.
- Excels in flexibility even at low temperatures in winter, easy to handle.
- Can be used for both delivery and suction.

## Applications

- For suction and feeding of gravel, slurry ore, and sandblasting at shipyards and steelworks.
- For collecting incinerator ash.
- Transportation of grains such as rice, wheat and corn.

Sizes and properties (W[M]-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Allowable Bending Radius<br>(mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|------------------------------------------|-------------------|-----------------|
| (38)             | 38.1±1.0  | 46.3      | 9.0        | 0.30 [3.1]                                                               | 60                                           | 100                                      | 500               | 20              |
| 50               | 50.8±1.0  | 59.3      | 10.0       | 0.25 [2.5]                                                               | 60                                           | 120                                      | 720               |                 |
| 65               | 63.5±1.0  | 74.5      | 14.0       | 0.25 [2.5]                                                               | 60                                           | 150                                      | 1,000             |                 |
| 75               | 76.2±1.0  | 89.3      | 15.0       | 0.25 [2.5]                                                               | 60                                           | 200                                      | 1,450             |                 |
| (90)             | 89.0±1.0  | 103.5     | 16.0       | 0.20 [2.0]                                                               | 55                                           | 270                                      | 2,000             |                 |
| 100              | 101.6±1.5 | 118.0     | 16.5       | 0.20 [2.0]                                                               | 55                                           | 300                                      | 2,560             |                 |
| (125)            | 126.5±1.5 | 144.6     | 22.0       | 0.15 [1.5]                                                               | 50                                           | 400                                      | 3,320             |                 |
| (150)            | 152.0±2.0 | 172.5     | 22.0       | 0.10 [1.0]                                                               | 50                                           | 600                                      | 5,000             |                 |

( ) are custom-made products.

# TIFLEX™ Hose WA type

\* WA type is right-handed.

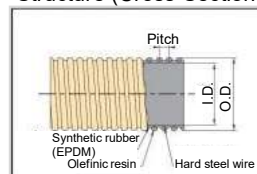
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Excels in heat resistance, can stand against 100°C hot-blast in straight duct.
- Excels in conductivity and antistatic effect.

## Applications

- Pressure discharge of gravel, mineral slurry, and sandblast.
- For recovery of burned ash.
- Transportation of grains such as rice, wheat and corn.

Sizes and properties (WA-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Allowable Bending Radius<br>(mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|------------------------------------------|-------------------|-----------------|
| 38               | 38.1±0.5  | 48.0      | 9.0        | 0.10 [1.0]                                                               | 110                                          | 130                                      | 570               | 20, 50          |
| 50               | 50.8±1.0  | 62.6      | 10.0       | 0.10 [1.0]                                                               | 110                                          | 180                                      | 860               |                 |
| 65               | 63.5±1.0  | 77.0      | 14.0       | 0.10 [1.0]                                                               | 110                                          | 220                                      | 1,200             | 20, (50)        |
| 75               | 76.2±1.0  | 92.0      | 15.0       | 0.10 [1.0]                                                               | 110                                          | 300                                      | 1,560             |                 |
| 90               | 89.0±1.0  | 107.0     | 16.0       | 0.10 [1.0]                                                               | 110                                          | 380                                      | 2,070             |                 |
| 100              | 101.6±1.5 | 120.5     | 16.5       | 0.10 [1.0]                                                               | 110                                          | 570                                      | 2,620             |                 |
| 125              | 127.0±1.5 | 148.5     | 22.0       | 0.10 [1.0]                                                               | 110                                          | 600                                      | 3,950             | 20              |
| 150              | 152.0±1.5 | 173.0     | 22.0       | 0.10 [1.0]                                                               | 110                                          | 900                                      | 4,800             |                 |
| 200              | 205.0±1.5 | 230.0     | 24.0       | 0.10 [1.0]                                                               | 90                                           | 1,000                                    | 7,900             | 10              |

( ) are custom-made products.

# TIFLEX™ Hose Abrasion Resistant E type (Custom-made products)

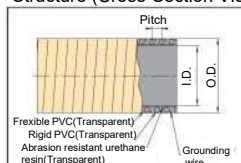
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Excels in abrasion resistance by use of abrasion resistant plastic as material of hose inner layer.
- Excels in antistatic effect by use of grounding wire.
- Transparent making it possible to confirm the contents.

## Applications

- Conveying of powders and grains.
- Suction and pressure feeding of iron powder, sand, blast, etc.

Sizes and properties (E[M]-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>(kgf/cm <sup>2</sup> or less) | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Allowable Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|---------------------------------------|-------------------|-----------------|
| 38               | 38.1±1.0  | 47.8      | 7.0        | 0.50 [5.1]                                                               | 60                                           | 370                                   | 800               | 50              |
| 50               | 50.8±1.0  | 62.5      | 8.0        | 0.40 [4.1]                                                               | 60                                           | 500                                   | 1,250             | 20・50           |
| 65               | 63.5±1.0  | 77.0      | 8.5        | 0.40 [4.1]                                                               | 60                                           | 620                                   | 1,495             |                 |
| 75               | 76.2±1.5  | 90.8      | 9.0        | 0.40 [4.1]                                                               | 55                                           | 800                                   | 2,130             |                 |
| 90               | 89.0±1.5  | 104.0     | 9.5        | 0.30 [3.1]                                                               | 55                                           | 1,100                                 | 2,720             |                 |
| 100              | 101.6±1.5 | 117.5     | 10.0       | 0.30 [3.1]                                                               | 55                                           | 1,120                                 | 3,000             | 20              |
| 125              | 126.5±2.0 | 143.5     | 11.0       | 0.25 [2.5]                                                               | 50                                           | 1,650                                 | 4,030             |                 |
| 150              | 151.6±2.0 | 168.0     | 13.0       | 0.20 [2.0]                                                               | 50                                           | 1,980                                 | 6,400             |                 |
| 200              | 204.0±2.0 | 224.0     | 16.8       | 0.20 [2.0]                                                               | 45                                           | 2,970                                 | 9,330             |                 |

( ) are custom-made products.

\* For antistatic effects, please refer to P18.

\* Thorough attention should be placed in abrasion of the inner surface by reason that fragments of the unding wire will get mixed into the conveyed matter when the grounding wire becomes exposed by abrasion of the inner surface during use of the Abrasion Resistant E type for which reason the hose should be replaced with a new hose beforehand.

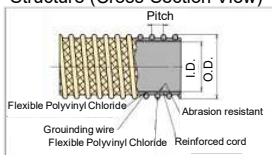
# TIFLEX™ Hose WSU type (Custom-made products)

\* WSU type is right-handed.

Hose



Structure (Cross-Section View)



## Features

- Excels in abrasion resistance more than ten times that of the TIFLEX™ hose WS type as material of special wear-resistant urethane resin. (According to the results of the spray wear test conducted by our company)
- Can be applicable for transport of fluids including water, as special urethane resin has excellent water resistance.
- Excels in antistatic effect by use of ground wire.
- Excels in pressure resistance and tensile strength by reinforcement of strong sythetic fibers.

Sizes and properties (WSU[M]-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>(kgf/cm <sup>2</sup> or less) | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Allowable Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|---------------------------------------|-------------------|-----------------|
| 75               | 76.2±1.0  | 93.3      | 15.1       | 0.50 [5.1]                                                               | 60                                           | 750                                   | 1,630             | 20              |
| 100              | 101.6±1.5 | 122.4     | 16.5       | 0.50 [5.1]                                                               | 60                                           | 1,250                                 | 2,340             |                 |
| 125              | 127.0±1.5 | 151.0     | 22.0       | 0.50 [5.1]                                                               | 55                                           | 1,500                                 | 3,580             |                 |
| 150              | 152.4±2.5 | 177.5     | 24.0       | 0.50 [5.1]                                                               | 55                                           | 2,000                                 | 4,630             |                 |
| 200              | 203.0±3.5 | 234.2     | 28.0       | 0.50 [5.1]                                                               | 50                                           | 2,250                                 | 7,600             | 10              |

## Applications

- For transporting slaked lime and activated carbon at a garbage incinerator.
- For transporting ore, sand, etc.
- For transporting other powders and granules that require wear resistance.

\* Thorough attention should be placed in abrasion of the inner surface by reason that fragments of the grounding wire will get mixed into the conveyed matter when the grounding wire becomes exposed by abrasion of the inner surface during use of the Abrasion Resistant WSU type for which reason the hose should be replaced with a new hose beforehand.

# Food Grade and Oil Resistant Hoses

## Food Grade Hose

*Fairly trusted by food industry as food conveying hose due to high operating efficiency.*

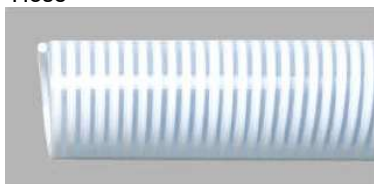
*The material of the part in contact with food complies with the Food Sanitation Law and the standards for food and additives (Ministry of Health and Welfare Notification No. 370).*

## Oil Resistant Hose

*Suited for conveying of oil and alcohol by use of good oil resistant material. In addition, provides same level of features as general hoses.*

# TIFLEX™ Hose SF type

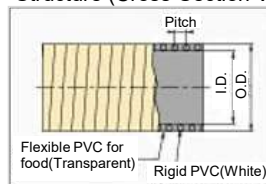
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Complies with the Food Sanitation Law and standards for foods and additives (Ministry of Health and Welfare Notification No. 370).
- Can convey even fat, oils and fatty foods. Bis phthalate (2-ethylhexyl) is not used.

## Applications

- For conveying of alcohol, soy sauce, and soft drinks.
- For conveying the other foods.

Sizes and properties (F[SH]-□)

| Nominal Dia. (φ) | I.D. (mm)                            | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|--------------------------------------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|-----------------------------|-------------------|-----------------|
| (25)             | 25.4±0.5                             | 32.0      | 6.0        | 0.50[5.1]                                                                | 70                                           | 210                         | 350               | 50              |
| (32)             | 32.0±0.5                             | 39.0      | 6.5        | 0.45[4.6]                                                                | 70                                           | 320                         | 475               |                 |
| 38               | 38.1±0.5                             | 45.5      | 7.0        | 0.40[4.1]                                                                | 70                                           | 340                         | 665               | 20, 50          |
| 50               | 50.8±1.0                             | 60.5      | 8.0        | 0.35[3.6]                                                                | 65                                           | 450                         | 1,090             | (20), 50        |
| (65)             | 63.5±1.0                             | 74.0      | 8.5        | 0.35[3.6]                                                                | 65                                           | 560                         | 1,400             | 20, 50          |
| (75)             | 76.2 <sup>+1.5</sup> <sub>-0.5</sub> | 87.0      | 9.0        | 0.35[3.6]                                                                | 65                                           | 730                         | 1,715             |                 |
| (100)            | 101.6±1.5                            | 115.0     | 10.0       | 0.30[3.1]                                                                | 60                                           | 1,350                       | 2,830             | 20              |
| (125)            | 127.0±1.5                            | 141.0     | 11.0       | 0.30 [3.1]                                                               | 55                                           | 2,300                       | 3,700             |                 |

( ) are custom-made products.

\* Thorough attention should be placed in abrasion of the inner surface by reason that fragments of the rigid material will get mixed into the conveyed matter when the rigid part becomes exposed by abrasion of the inner surface during use for which reason the hose should be replaced with a new hose beforehand.

# TIFLEX™ Hose Oil Resistant F type

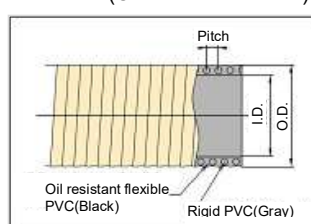
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Using special material (soft part of the hose) excels in oil resistance.
- Light in weight and easy to bend making handling easy.
- Flexibility in low temperature get progressed better than our old one.
- Suited for delivery use.

## Applications

- Conveying of mineral oil, animal/plant oil, alcohol, kerosene, light oil, heavy oil etc, except food.

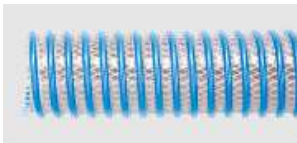
Sizes and properties (F[Y]-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (-0.1MPa/-760mmHg)<br>(°C) | Allowable Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|----------------------------------------------|---------------------------------------|-------------------|-----------------|
| (25)             | 25.4±0.5  | 31.7      | 6.0        | 0.50 [5.1]                                                               | 70                                           | 175                                   | 370               | 20, 50          |
| (32)             | 32.0±0.5  | 39.0      | 6.5        | 0.45 [4.6]                                                               | 70                                           | 250                                   | 520               |                 |
| (38)             | 38.1±0.5  | 46.0      | 7.0        | 0.40 [4.1]                                                               | 70                                           | 400                                   | 660               |                 |
| 50               | 50.8±1.0  | 60.5      | 8.0        | 0.40 [4.1]                                                               | 65                                           | 625                                   | 1,120             |                 |
| 65               | 63.5±1.0  | 73.5      | 8.5        | 0.40 [4.1]                                                               | 65                                           | 775                                   | 1,420             | 20, (50)        |
| (75)             | 76.2±1.0  | 86.8      | 9.0        | 0.40 [4.1]                                                               | 65                                           | 1,150                                 | 1,780             | 20, 50          |
| (100)            | 101.6±1.5 | 115.0     | 10.0       | 0.30 [3.1]                                                               | 60                                           | 1,500                                 | 2,890             |                 |

( ) are custom-made products.

# TIFLEX™ Hose Oil Resistant WS type \*Oil Resistant WS Type is right-handed.

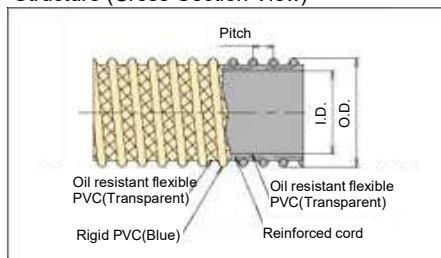
Hose



Example of Metal Fixture Fitting



Structure (Cross-Section View)



## Features

- Using special material (soft part of the hose) excels in oil resistance.
- Lightweight, flexible, and easy to handle.
- Excels in tensile strength and pressure resistance due to reinforcement cord, and little elongation.
- Suited for delivery and suction use.

Sizes and properties (GL-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp.<br>(-0.1MPa/<br>-760mmHg)<br>(°C) | Allowable Bending Radius<br>(mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------|-------------------|-----------------|
| 50               | 50.8±1.0  | 62.8      | 10.0       | 0.50 [05.1]                                                              | 65                                                  | 200                                      | 860               | 20, 50          |
| 65               | 63.5±1.0  | 78.0      | 14.3       | 0.50 [05.1]                                                              | 60                                                  | 250                                      | 1,230             |                 |
| 75               | 76.0±1.0  | 90.8      | 15.1       | 0.50 [05.1]                                                              | 60                                                  | 350                                      | 1,500             |                 |
| 100              | 101.6±1.5 | 119.0     | 16.5       | 0.50 [05.1]                                                              | 60                                                  | 500                                      | 2,350             |                 |
| (125)            | 127.0±1.5 | 151.0     | 22.0       | 0.50 [05.1]                                                              | 55                                                  | 600                                      | 3,885             | 20              |

( ) is custom-made products.

## Applications

- Vacuum hose for suction work vehicles such as waste liquid, waste oil, sludge, etc.



# Duct Hoses

*Reliable item focused on fundamental performance.  
Used for conveyance system of wide industrial field  
which requires higher air/powder conveying  
performance and abrasion performance.*

# TIFLEX™ Hose GL type

## Features

- Light in weight and easy to carry.
- Excels in flexibility.
- Excels in chemical resistance such as acid and alkalis.
- Its low flow resistance makes high conveying capacity attainable.

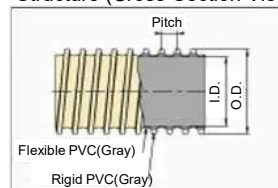
## Applications

- For air conditioning.
- Suited for collecting use of powders and grains for dust collect machine.
- Can be used for air conveying of general machineries including woodworking machines, powder spraying machines, and general dust collectors.

Hose



Structure (Cross-Section View)



Sizes and properties (GL-□)

| Nominal Dia. (φ) | I.D. (mm)                            | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|--------------------------------------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 25               | 25.0±0.8                             | 32.4      | 7.6        | 0.06 [0.6]                                                               | -66.5 [-500]                                                        | 25                          | 185               | 50              |
| 32               | 32.0±1.0                             | 39.8      | 8.0        | 0.06 [0.6]                                                               | -66.5 [-500]                                                        | 32                          | 300               |                 |
| 38               | 38.1±1.0                             | 45.9      | 9.0        | 0.06 [0.6]                                                               | -66.5 [-500]                                                        | 35                          | 370               |                 |
| 45               | 43.7±1.0                             | 53.5      | 12.0       | 0.05 [0.5]                                                               | -66.5 [-500]                                                        | 45                          | 440               |                 |
| 50               | 50.8 <sup>+1.5</sup> <sub>-1.0</sub> | 59.9      | 12.0       | 0.05 [0.5]                                                               | -66.5 [-500]                                                        | 50                          | 480               |                 |
| 65               | 63.5 <sup>+1.5</sup> <sub>-1.0</sub> | 72.6      | 12.0       | 0.04 [0.4]                                                               | -66.5 [-500]                                                        | 60                          | 600               | 30              |
| 75               | 76.2 <sup>+1.5</sup> <sub>-1.0</sub> | 85.8      | 14.5       | 0.04 [0.4]                                                               | -33.0 [-250]                                                        | 75                          | 650               |                 |
| 90               | 89.0±1.5                             | 98.6      | 14.5       | 0.03 [0.3]                                                               | -33.0 [-250]                                                        | 85                          | 730               |                 |
| 100              | 101.6±1.5                            | 112.0     | 14.5       | 0.03 [0.3]                                                               | -21.0 [-160]                                                        | 90                          | 980               |                 |
| (115)            | 114.5 <sup>+3.0</sup> <sub>-0</sub>  | 125.3     | 17.5       | 0.02 [0.2]                                                               | -20.0 [-150]                                                        | 115                         | 1,050             | 20              |
| 125              | 127.0±1.5                            | 137.2     | 17.5       | 0.02 [0.2]                                                               | -20.0 [-150]                                                        | 120                         | 1,100             |                 |
| 150              | 152.4±1.5                            | 163.8     | 17.5       | 0.02 [0.2]                                                               | -14.5 [-110]                                                        | 150                         | 1,510             |                 |
| (165)            | 166.4±1.5                            | 177.4     | 17.5       | 0.02 [0.2]                                                               | -14.5 [-110]                                                        | 165                         | 1,710             |                 |
| (175)            | 175.0±1.5                            | 187.0     | 17.5       | 0.02 [0.2]                                                               | -10.0 [-78]                                                         | 180                         | 1,800             |                 |
| 200              | 202.0±2.0                            | 215.0     | 17.5       | 0.01 [0.1]                                                               | -6.0 [-45]                                                          | 210                         | 2,340             |                 |
| 250              | 252.0±2.0                            | 265.7     | 20.0       | 0.01 [0.1]                                                               | -4.5 [-35]                                                          | 260                         | 2,910             | 10, 20          |
| 300              | 303.0±2.0                            | 316.4     | 20.0       | 0.01 [0.1]                                                               | -3.0 [-23]                                                          | 310                         | 3,370             |                 |

( ) are custom-made products.

\* Exclusive cuff is available.

# TIFLEX™ Hose GL-2 type

(Custom-made products)

## Features

- Lighter in weight than current duct hoses (About 50% lighter in weight than our other hoses.)
- Excels in flexibility.
- Excels in chemical resistance such as acids and alkalis.
- Low flow resistance makes high conveying capacity attainable.

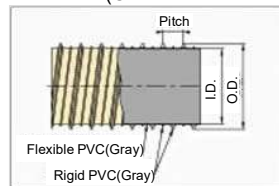
## Applications

- For air conditioning.

Hose



Structure (Cross-Section View)



Sizes and properties (GL2-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 50               | 50.8±1.5  | 57.8      | 15.0       | 0.04 [0.4]                                                               | -44.0 [-330]                                                        | 60                          | 240               | 20              |
| 65               | 63.5±1.5  | 70.6      | 15.0       | 0.04 [0.4]                                                               | -28.0 [-210]                                                        | 70                          | 290               |                 |
| 75               | 76.2±1.5  | 83.7      | 17.0       | 0.03 [0.3]                                                               | -18.5 [-140]                                                        | 80                          | 390               |                 |
| 100              | 101.6±1.5 | 109.7     | 17.0       | 0.02 [0.2]                                                               | -9.0 [-70]                                                          | 110                         | 500               |                 |
| 125              | 127.0±1.5 | 135.8     | 20.0       | 0.02 [0.2]                                                               | -6.0 [-45]                                                          | 135                         | 735               |                 |
| 150              | 152.4±1.5 | 161.2     | 20.0       | 0.02 [0.2]                                                               | -4.0 [-30]                                                          | 160                         | 882               |                 |

# TIFLEX™ Hose N type

Since wire might be exposed from a hose end, hose should be handled carefully.

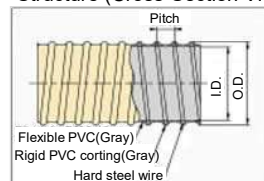
## Features

- Light in weight and easy to carry.
- Excels in flexibility.
- Excels in chemical resistance such as acids and alkalis.
- Less thermal deformation by use of metal wire as core wire.

Hose



Structure (Cross-Section View)



Sizes and properties (N-□)

| Nominal Dia. (φ) | I.D. (mm)                             | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|---------------------------------------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 16               | 16.7±0.7                              | 21.2      | 7.5        | 0.06 [0.6]                                                               | -101.0 [-760]                                                       | 20                          | 110               | 20              |
| 19               | 19.5±0.7                              | 24.0      | 8.0        | 0.06 [0.6]                                                               | -101.0 [-760]                                                       | 23                          | 130               |                 |
| 25               | 25.5±0.7                              | 30.0      | 9.0        | 0.06 [0.6]                                                               | -101.0 [-760]                                                       | 25                          | 170               |                 |
| 32               | 32.5±0.7                              | 37.0      | 9.0        | 0.06 [0.6]                                                               | -101.0 [-760]                                                       | 35                          | 210               |                 |
| 38               | 38.1±0.7                              | 42.6      | 9.0        | 0.06 [0.6]                                                               | -101.0 [-760]                                                       | 40                          | 250               |                 |
| 45               | 45.5±1.0                              | 52.3      | 11.5       | 0.05 [0.5]                                                               | -101.0 [-760]                                                       | 45                          | 400               |                 |
| 50               | 50.8±1.0                              | 57.6      | 11.5       | 0.05 [0.5]                                                               | -101.0 [-760]                                                       | 55                          | 440               |                 |
| 65               | 63.5 <sup>+1.5</sup> <sub>-0.5</sub>  | 70.5      | 11.5       | 0.04 [0.4]                                                               | -73.0 [-550]                                                        | 70                          | 540               |                 |
| 75               | 75.5 <sup>+1.5</sup> <sub>-0.5</sub>  | 82.5      | 11.5       | 0.04 [0.4]                                                               | -33.0 [-250]                                                        | 80                          | 770               |                 |
| 90               | 89.0 <sup>+1.5</sup> <sub>-0.5</sub>  | 96.0      | 11.5       | 0.03 [0.3]                                                               | -33.0 [-250]                                                        | 90                          | 910               |                 |
| 100              | 102.2 <sup>+2.0</sup> <sub>-0.5</sub> | 109.0     | 14.5       | 0.03 [0.3]                                                               | -21.0 [-160]                                                        | 100                         | 950               |                 |
| 125              | 127.0 <sup>+2.0</sup> <sub>-1.0</sub> | 134.5     | 15.5       | 0.02 [0.2]                                                               | -20.0 [-150]                                                        | 120                         | 1,300             |                 |
| 150              | 152.6 <sup>+2.0</sup> <sub>-1.5</sub> | 160.0     | 15.5       | 0.02 [0.2]                                                               | -14.5 [-110]                                                        | 130                         | 1,590             |                 |
| (175)            | 177.0 <sup>+2.0</sup> <sub>-1.5</sub> | 184.0     | 16.5       | 0.02 [0.2]                                                               | -13.0 [-100]                                                        | 170                         | 1,840             |                 |
| 200              | 204.1 <sup>+2.0</sup> <sub>-1.5</sub> | 211.5     | 16.5       | 0.01 [0.1]                                                               | -8.0 [-62]                                                          | 200                         | 2,110             | 10              |
| 250              | 252.0 <sup>+2.0</sup> <sub>-2.0</sub> | 261.5     | 16.5       | 0.01 [0.1]                                                               | -6.0 [-45]                                                          | 250                         | 3,600             |                 |
| (300)            | 303.0 <sup>+3.0</sup> <sub>-2.0</sub> | 312.5     | 16.5       | 0.01 [0.1]                                                               | -4.5 [-35]                                                          | 300                         | 4,300             |                 |
| (350)            | 354.0 <sup>+3.0</sup> <sub>-2.0</sub> | 363.5     | 17.0       | 0.01 [0.1]                                                               | -3.0 [-23]                                                          | 350                         | 5,000             |                 |
| (400)            | 405.0 <sup>+3.0</sup> <sub>-2.0</sub> | 414.5     | 17.0       | 0.005 [0.05]                                                             | -2.0 [-15]                                                          | 400                         | 5,710             |                 |

( ) are custom-made products.

\* Exclusive cuffs are available.

# TIFLEX™ Hose Abrasion Resistant GL type

\* Abrasion Resistant GL type is right-handed.

## Features

- Excels in abrasion resistance as well as usable in a wide temperature range from low to high temp. (about -30 ~ 80°C)
- Excels in conductivity and endowed with antistatic effects.
- Excels in weather resistance.
- Suits for conveying of powders and particles, dust collection, hot air conveying and exhaust.

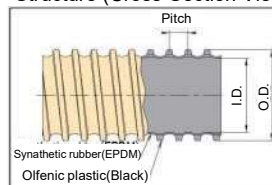
## Applications

- Conveying of powders and particles.
- Conveying of iron powder, aluminum powder, metal powder, etc.
- Conveying of wooden chips, pieces of paper and hulled grains.
- Hot air conveying and exhaust.
- Duct collection, conveying and exhaust requiring abrasion resistance, conductivity and heat resistance.

Hose



Structure (Cross-Section View)



Sizes and properties (GL[M]-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 38               | 38.1±1.0  | 46.0      | 9.0        | 0.05 [0.5]                                                               | -66.5 [-500]                                                        | 45                          | 340               | 30              |
| 50               | 50.8±1.5  | 61.8      | 10.5       | 0.05 [0.5]                                                               | -66.5 [-500]                                                        | 60                          | 500               |                 |
| 65               | 63.5±1.5  | 74.7      | 14.0       | 0.04 [0.4]                                                               | -66.5 [-500]                                                        | 70                          | 600               |                 |
| 75               | 76.2±1.5  | 87.6      | 16.5       | 0.04 [0.4]                                                               | -33.0 [-250]                                                        | 80                          | 700               |                 |
| 90               | 89.8±1.5  | 101.4     | 17.0       | 0.03 [0.3]                                                               | -33.0 [-250]                                                        | 100                         | 780               |                 |
| 100              | 102.5±2.0 | 114.6     | 18.0       | 0.03 [0.3]                                                               | -21.0 [-160]                                                        | 105                         | 980               | 20              |
| 125              | 126.5±2.0 | 140.9     | 22.5       | 0.02 [0.2]                                                               | -20.0 [-150]                                                        | 125                         | 1,280             |                 |
| 150              | 152.0±2.0 | 167.0     | 24.0       | 0.02 [0.2]                                                               | -14.5 [-110]                                                        | 155                         | 1,660             |                 |
| 200              | 208.0±2.0 | 223.0     | 26.0       | 0.01 [0.1]                                                               | -8.0 [-62]                                                          | 190                         | 2,360             |                 |

\* Exclusive cuffs (Φ38, Φ50) are available.

# TIFLEX™ Hose Oil Resistant GL type

## Features

- Using special material (for hose soft part) with abrasion resistance which is hardly hardened against lubricant oil, cutting oil, etc.
- Light in weight and excels in flexibility.
- Its low flow resistance makes high conveying capacity attainable.

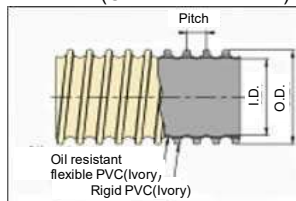
## Applications

- For recovery of oil-mist of lathe, milling machine, and machine tool.
- For conveying and exhaust air in the place where oil scatters.

Hose



Structure (Cross-Section View)



Sizes and properties (GL[Y]-□)

| Nominal Dia. (φ) | I.D. (mm)                            | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|--------------------------------------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 38               | 38.1±1.0                             | 45.9      | 9.0        | 0.06 [0.6]                                                               | -66.5 [-500]                                                        | 35                          | 300               | 50              |
| 50               | 50.8 <sup>+1.5</sup> <sub>-1.0</sub> | 59.9      | 12.0       | 0.05 [0.5]                                                               | -66.5 [-500]                                                        | 50                          | 480               |                 |
| 65               | 63.5 <sup>+1.5</sup> <sub>-1.0</sub> | 72.6      | 12.0       | 0.04 [0.4]                                                               | -66.5 [-500]                                                        | 60                          | 600               | 30              |
| 75               | 76.2 <sup>+1.5</sup> <sub>-1.0</sub> | 85.8      | 14.5       | 0.04 [0.4]                                                               | -33.0 [-250]                                                        | 75                          | 650               |                 |
| (90)             | 89.0±1.5                             | 98.6      | 14.5       | 0.03 [0.3]                                                               | -33.0 [-250]                                                        | 85                          | 730               |                 |
| 100              | 101.6±1.5                            | 112.0     | 14.5       | 0.03 [0.3]                                                               | -21.0 [-160]                                                        | 90                          | 980               |                 |
| 125              | 127.0±1.5                            | 137.5     | 17.5       | 0.02 [0.2]                                                               | -20.0 [-150]                                                        | 120                         | 1,100             | 20              |
| 150              | 152.4±1.5                            | 163.8     | 17.5       | 0.02 [0.2]                                                               | -14.5 [-110]                                                        | 150                         | 1,550             |                 |
| 200              | 202.0±2.0                            | 215.0     | 17.5       | 0.01 [0.1]                                                               | -8.0 [-62]                                                          | 210                         | 2,340             |                 |

( ) is custom-made product.

# TIFLEX™ Hose GL-E type

## Features

- Grounding can be done by utilizing the grounding wire put through the hose rigid part by which worries caused by the build-up of static electricity are overcome.
- Low in air flow resistance making it possible to improve the conveying capacity.
- Transparent making it possible to confirm the contents.
- Cutting of hose and exposure of grounding wire are easy.

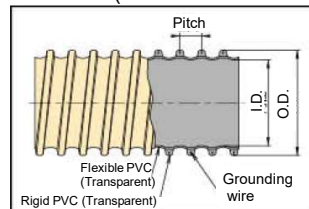
## Applications

- Dust collection of wood working machine and pneumatic conveying of powders.
- Indoor piping of clean room where static electricity is undesirable.

Hose



Structure (Cross-Section View)



Sizes and properties (GLE-□)

| Nominal Dia. (φ) | I.D. (mm)                            | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|--------------------------------------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 38               | 38.1±1.0                             | 44.5      | 9.0        | 0.06 [0.6]                                                               | -66.5 [-500]                                                        | 35                          | 340               | 20              |
| 50               | 50.8 <sup>+1.5</sup> <sub>-1.0</sub> | 59.9      | 12.0       | 0.05 [0.5]                                                               | -66.5 [-500]                                                        | 50                          | 520               |                 |
| 65               | 63.5 <sup>+1.5</sup> <sub>-1.0</sub> | 72.6      | 12.0       | 0.04 [0.4]                                                               | -66.5 [-500]                                                        | 60                          | 630               |                 |
| 75               | 76.2±1.5                             | 84.5      | 14.5       | 0.04 [0.4]                                                               | -33.0 [-250]                                                        | 75                          | 640               |                 |
| (90)             | 89.0±1.5                             | 98.6      | 14.5       | 0.03 [0.3]                                                               | -33.0 [-250]                                                        | 85                          | 935               |                 |
| 100              | 101.6±1.5                            | 112.0     | 14.5       | 0.03 [0.3]                                                               | -21.0 [-160]                                                        | 90                          | 950               |                 |
| 125              | 127.0±1.5                            | 138.2     | 17.5       | 0.02 [0.2]                                                               | -20.0 [-150]                                                        | 120                         | 1,120             |                 |
| 150              | 152.4±1.5                            | 163.8     | 17.5       | 0.02 [0.2]                                                               | -14.5 [-110]                                                        | 150                         | 1,430             |                 |

( ) is custom-made product.

\* Exclusive cuffs are available.

\* Ground connection is necessary.

\* For antistatic effect, please refer to P31.

## Pulling out and cutting method of grounding wire



1

Apply a knife along the hose rigid part and cut the soft part.



2

Cut a nick into the hose rigid part with a knife.



3

Bend the nicked part of the hose rigid part with hands several times and break this part.

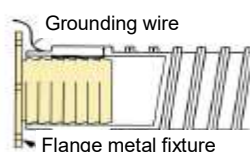


4

Slowly pull off the hose rigid part.

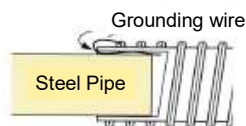
## Setting method of antistatic grounding wire

### Connection with Metal Fixture



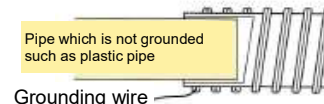
In case that exclusive cuff which is fitted the hose connects with a metal fixture.

### Connection with Steel Pipe



In case that the cut hose connects with a steel pipe.

### Connection with Plastic Pipe



Should be grounded directly with grounding wire is coming out from the hose in case of the connection which is difficult to ground.

# TIFLEX™ Hose GL-ST type

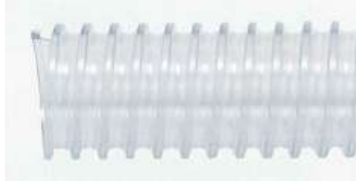
## Features

- Transparent type of GL type.
- Transparent making it possible to confirm the contents.
- Light weighted, flexible, and low airflow resistance as same as GL type.
- Excels in antistatic effect because the soft part is made by PVC contains antistatic substance.

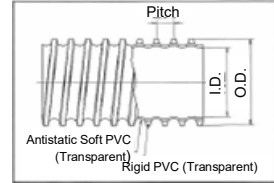
## Applications

- Dust collection of wood working machine and pneumatic conveying of powders.
- Indoor piping of clean room where static electricity is undesirable.

Hose



Structure (Cross-Section View)



Sizes and properties (GL[ST]-□)

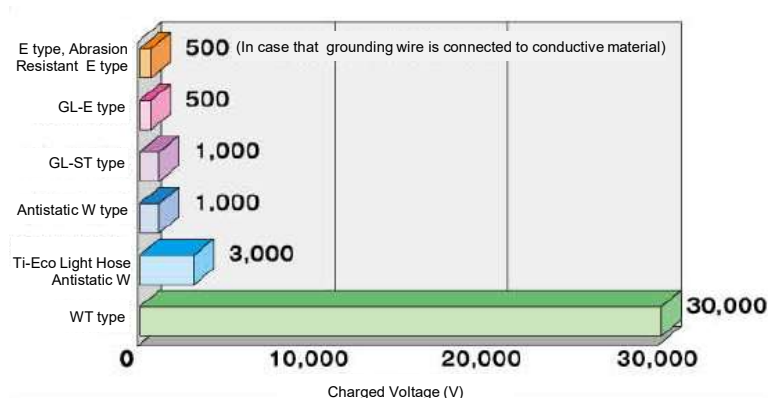
| Nominal Dia. (φ) | I.D. (mm)                            | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|--------------------------------------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 25               | 25.0±0.8                             | 32.4      | 7.6        | 0.06 [0.6]                                                               | -66.5 [-500]                                                        | 25                          | 200               | 50              |
| 32               | 32.0±1.0                             | 39.8      | 8.0        | 0.06 [0.6]                                                               | -66.5 [-500]                                                        | 32                          | 260               |                 |
| 38               | 38.1±1.0                             | 45.9      | 9.0        | 0.06 [0.6]                                                               | -66.5 [-500]                                                        | 35                          | 320               |                 |
| 50               | 50.8 <sup>+1.5</sup> <sub>-1.0</sub> | 59.9      | 12.0       | 0.05 [0.5]                                                               | -66.5 [-500]                                                        | 50                          | 453               |                 |
| 65               | 63.5 <sup>+1.5</sup> <sub>-1.0</sub> | 72.6      | 12.0       | 0.04 [0.4]                                                               | -66.5 [-500]                                                        | 60                          | 557               | 30              |
| 75               | 76.2 <sup>+1.5</sup> <sub>-1.0</sub> | 85.8      | 14.5       | 0.04 [0.4]                                                               | -33.0 [-250]                                                        | 75                          | 600               |                 |
| (90)             | 89.0±1.5                             | 98.6      | 14.5       | 0.03 [0.3]                                                               | -33.0 [-250]                                                        | 85                          | 695               |                 |
| 100              | 101.6±1.5                            | 112.0     | 14.5       | 0.03 [0.3]                                                               | -21.0 [-160]                                                        | 90                          | 870               |                 |
| 125              | 127.0±1.5                            | 137.5     | 17.5       | 0.02 [0.2]                                                               | -20.0 [-150]                                                        | 120                         | 960               | 20              |
| 150              | 152.4±1.5                            | 163.8     | 17.5       | 0.02 [0.2]                                                               | -14.5 [-110]                                                        | 150                         | 1,350             |                 |
| (175)            | 175.0±1.5                            | 187.0     | 17.5       | 0.02 [0.2]                                                               | -10.0 [-78]                                                         | 180                         | 1,892             |                 |
| 200              | 202.0±2.0                            | 215.0     | 17.5       | 0.01 [0.1]                                                               | -6.0 [-45]                                                          | 210                         | 2,338             |                 |
| (250)            | 252.0±2.0                            | 265.7     | 20.0       | 0.01 [0.1]                                                               | -4.5 [-35]                                                          | 260                         | 2,872             | 10, 20          |
| (300)            | 303.0±2.0                            | 316.4     | 20.0       | 0.01 [0.1]                                                               | -3.0 [-23]                                                          | 310                         | 3,389             |                 |

( ) are custom-made products.

\* Exclusive cuffs are available.

## Antistatic Effect

Measured each maximum voltage which is charged to φ 38mm hoses after rigid PVC pellets were conveyed.

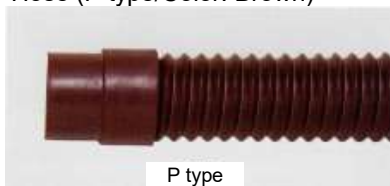


These are not standard values, but test ones.

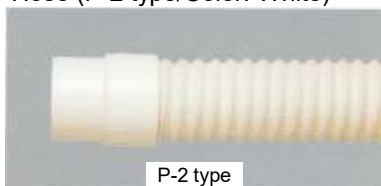
# TIFLEX™ Hose P, P-2 type

Since wire might be exposed from a hose end, hose should be handled carefully.

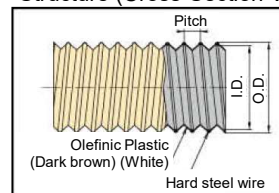
Hose (P type/Color: Brown)



Hose (P-2 type/Color: White)



Structure (Cross-Section View)



## Features

- Excels in stretchability (shrinkage rate 1/3 ~ 1/4). Freely stretchable and excels in accommodation property making storage convenient. Also, less space is needed for stocking.
- Hose transportation cost is less making it economical.
- 50% lighter in weight than existing duct hoses. (Compared with Tigers Polymer's other duct hoses)
- Light weight and freely bendable making piping work easy.
- Hose can be bent toward any direction for which reason elbow cuffs are not necessary.

Sizes and properties (P-□, P2-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 38               | 37.5      | 41.5±0.8  | 9.5        | 0.018 [0.18]                                                             | -17.0 [-130]                                                        | 30                          | 140               | 5               |
| 50               | 53.5      | 57.5±1.0  | 11.0       | 0.014 [0.14]                                                             | -17.0 [-130]                                                        | 40                          | 175               |                 |
| 65               | 67.0      | 71.0±1.0  | 11.5       | 0.011 [0.09]                                                             | -17.0 [-130]                                                        | 50                          | 210               |                 |
| 75               | 76.5      | 80.5±1.0  | 12.0       | 0.009 [0.09]                                                             | -17.0 [-130]                                                        | 60                          | 245               |                 |
| 90               | 92.0      | 96.0±1.0  | 14.0       | 0.007 [0.07]                                                             | -17.0 [-130]                                                        | 70                          | 320               |                 |
| 100              | 102.0     | 106.0±1.0 | 14.0       | 0.007 [0.07]                                                             | -17.0 [-130]                                                        | 75                          | 365               |                 |
| 125              | 127.5     | 131.5±1.0 | 15.0       | 0.005 [0.05]                                                             | -11.0 [-85]                                                         | 90                          | 435               |                 |
| 150              | 155.0     | 159.0±1.0 | 15.0       | 0.004 [0.04]                                                             | -8.0 [-62]                                                          | 110                         | 530               |                 |
| 200              | 202.0     | 208.0±1.0 | 19.3       | 0.003 [0.03]                                                             | -6.0 [-45]                                                          | 140                         | 1,085             |                 |
| 250              | 253.5     | 259.5±1.0 | 21.5       | 0.002 [0.02]                                                             | -4.5 [-35]                                                          | 180                         | 1,250             |                 |
| 300              | 302.0     | 308.0±1.5 | 24.0       | 0.002 [0.02]                                                             | -4.0 [-30]                                                          | 230                         | 1,455             |                 |

(Note) I.D. shall be measured as the distance between the helical reinforcement wires.

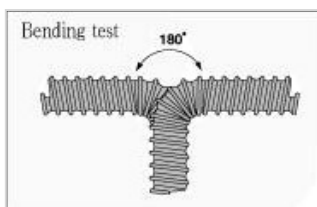
## Applications

- For spot cooling and heating.
- For air-conditioning.
- For indoor air conveying and exhaust.
- For exhaust of paint and gas venting.
- For gas conveying (include hot air).
- Can be shaped into various forms making it usable for interior designing as well.

\* There are two types. One is TIFLEX™ P type (dark brown) and the other one is P-2 type (white). There is no difference in performance and specification.

Bending Test

| Nominal Dia. (φ) | Bending Strength (Bent 180°, 25°C, 20 times/min) | Stretching Strength (25°C, 20 times/min) | Tensile Strength (25°C) N {kgf} |
|------------------|--------------------------------------------------|------------------------------------------|---------------------------------|
| 50               | 100,000 times no change                          | 100,000 times no change                  | 392 {40.0}                      |
| 65               | 100,000 times no change                          | 100,000 times no change                  | 490 {50.0}                      |
| 75               | 100,000 times no change                          | 100,000 times no change                  | 588 {60.0}                      |



[Usable temperature range] -20 to 80°C

However, please consult us because there are case of the stretching performance being affected when used continuously at over 60°C.

# TIFLEX™ Hose Flame Retardant P type

Since wire might be exposed from a hose end, hose should be handled carefully.

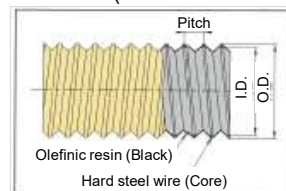
## Features

- Flame retardant TIFLEX™ Hose P type.
- Endowed with flame retardancy which is equivalent to UL94-HB.
- Excels in flexibility due to the same structure as P type (shrinkage rate 1/3 - 1/4).
- Light in weight and freely bendable. It can make ductwork easy, improve workability and save labor.
- Flame retardant cuffs are also available.

Hose



Structure (Cross-Section View)



Sizes and properties (P[N]-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 38               | 37.5      | 41.5±0.8  | 9.5        | 0.018 [0.18]                                                             | -17.0 [-130]                                                        | 30                          | 180               | 5               |
| 50               | 53.5      | 57.5±1.0  | 11.0       | 0.014 [0.14]                                                             | -17.0 [-130]                                                        | 40                          | 220               |                 |
| 65               | 67.0      | 71.0±1.0  | 11.5       | 0.011 [0.09]                                                             | -17.0 [-130]                                                        | 50                          | 260               |                 |
| 75               | 76.5      | 80.5±1.0  | 12.0       | 0.009 [0.09]                                                             | -17.0 [-130]                                                        | 60                          | 310               |                 |
| 90               | 92.0      | 96.0±1.0  | 14.0       | 0.007 [0.07]                                                             | -17.0 [-130]                                                        | 70                          | 340               |                 |
| 100              | 102.0     | 106.0±1.0 | 14.0       | 0.007 [0.07]                                                             | -17.0 [-130]                                                        | 75                          | 410               |                 |
| 125              | 127.5     | 131.5±1.0 | 15.0       | 0.005 [0.05]                                                             | -11.0 [-85]                                                         | 90                          | 460               |                 |
| 150              | 155.0     | 159.0±1.0 | 15.0       | 0.004 [0.04]                                                             | -8.0 [-62]                                                          | 110                         | 550               |                 |
| 200              | 202.0     | 208.0±1.0 | 19.3       | 0.003 [0.03]                                                             | -6.0 [-45]                                                          | 140                         | 1,190             |                 |
| 250              | 253.5     | 259.5±1.0 | 21.5       | 0.002 [0.02]                                                             | -4.5 [-35]                                                          | 180                         | 1,420             |                 |
| 300              | 302.0     | 308.0±1.5 | 24.0       | 0.002 [0.02]                                                             | -4.0 [-30]                                                          | 230                         | 1,540             |                 |

(Note) I.D. shall be measured as the distance between the helical reinforcement wires.

## Applications

- Residential parts.
- For spot cooling and heating.
- For air-conditioning.
- For indoor air conveying and exhaust.
- For exhaust of paint and gas venting.
- For gas conveying (include hot air).
- Can be shaped into various forms making it usable for interior designing as well.

# TIFLEX™ Hose A type

\* A type is right-handed.

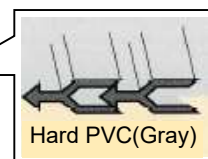
## Features

- Endowed with flame retardancy which is equivalent to UL94-V0.
- Freely stretchable and freely fixable.  
(Degree of shrinkage 30% ~ 50%)
- Endowed with special construction making use possible by changing the bore diameter.  
( Degree of bore diameter change  $\pm 15\%$ )
- Low in flow resistance and also small in abrasion.
- End cuffs are also available.

## Applications

- Suited for uses such as spot cooler.  
Note: Not suited for applications requiring air-tightness.

Hose



Sizes and properties (A-□)

| Nominal Dia. ( $\phi$ ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Stretch Rate (times) | Minimum Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|-------------------------|-----------|-----------|------------|----------------------|-------------------------------------|-------------------|-----------------|
| 55                      | 55        | 62.0      | 7.5        | 1.30                 | 155                                 | 550               | 10              |
| 65                      | 65        | 72.0      | 7.5        | 1.30                 | 170                                 | 680               |                 |
| 75                      | 75        | 82.0      | 7.5        | 1.30                 | 195                                 | 750               |                 |
| 90                      | 90        | 97.0      | 7.5        | 1.30                 | 250                                 | 870               |                 |
| 100                     | 100       | 107.0     | 7.5        | 1.30                 | 270                                 | 1,000             |                 |
| 125                     | 125       | 132.0     | 7.5        | 1.30                 | 330                                 | 1,250             |                 |
| 150                     | 150       | 157.0     | 7.5        | 1.30                 | 380                                 | 1,500             |                 |
| 175                     | 175       | 182.0     | 7.5        | 1.30                 | 415                                 | 1,690             | 4               |
| 200                     | 200       | 207.0     | 7.5        | 1.30                 | 440                                 | 2,000             |                 |
| 250                     | 250       | 260.0     | 10.5       | 1.50                 | 580                                 | 3,000             | 2               |
| 300                     | 300       | 310.0     | 10.5       | 1.50                 | 755                                 | 3,450             |                 |

\* Exclusive cuff is available.

\* Material: PP (ivory color) products are also available. Please contact us.

# Heat Resistant Duct Hoses

*tigerflex Hose V series is a heat resistant flexible hose with special structure made by originally developed manufacturing method using metals and other special materials in accordance with the application.*

*We have PAL type, AG type, FP type and SUS type.*

*And AP type is a heat-resistant and airtight flexible hose.*

*They can be selected according to its use conditions.*

# TIFLEX™ Hose AP type

## Features

- Heat resistant flexible hose constructed of special laminated aluminum foil and olefinic resin.
- Excels in airtightness due to using olefinic resin for internal and external of the special laminated aluminum.
- Excels in handling due to its lightweight and flexibility.
- Continuous usable temperature is about 100 °C or lower.

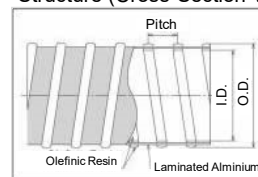
## Applications

- For gas conveying (include hot air).
- For air conveying and exhaust requiring airtightness .

Hose



Structure (Cross-Section View)

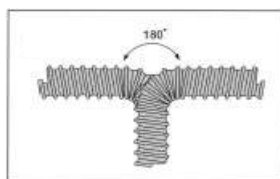


Sizes and properties (AP-□)

| Nominal Dia. (φ) | I.D. (mm)                             | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|---------------------------------------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 38               | 38.1±1.0                              | 42.9      | 11.5       | 0.06[0.61]                                                               | -50.0[-375]                                                         | 60                          | 120               | 5, (20)         |
| 50               | 50.8 <sup>+1.5</sup> <sub>-1.0</sub>  | 56.4      | 15.0       | 0.05[0.51]                                                               | -40.0[-300]                                                         | 70                          | 150               |                 |
| 75               | 76.2 <sup>+1.5</sup> <sub>-1.0</sub>  | 83.8      | 23.0       | 0.04[0.41]                                                               | -30.0[-225]                                                         | 80                          | 250               |                 |
| 100              | 101.6±1.5                             | 110.0     | 23.0       | 0.03[0.31]                                                               | -20.0[-150]                                                         | 100                         | 380               |                 |
| (125)            | 126.0 <sup>+2.0</sup> <sub>-1.5</sub> | 136.0     | 30.0       | 0.02[0.20]                                                               | -15.0[-115]                                                         | 120                         | 450               | 5, 20           |
| (150)            | 151.5 <sup>+2.0</sup> <sub>-1.5</sub> | 162.3     | 30.0       | 0.02[0.20]                                                               | -12.0[-90]                                                          | 180                         | 650               |                 |
| (200)            | 202.0±2.0                             | 214.4     | 30.0       | 0.01[0.10]                                                               | -6.0[-45]                                                           | 240                         | 1,100             |                 |

( ) are custom-made products.

| Nominal Dia. (φ) | Bending Strength<br>(Bent 180° , 25°C, 20 times/min) |
|------------------|------------------------------------------------------|
| 38               | 10,000 times<br>Normal airtightness                  |
| 50               | 10,000 times<br>Normal airtightness                  |
| 75               | 10,000 times<br>Normal airtightness                  |
| 100              | 10,000 times<br>Normal airtightness                  |



# TIFLEX™ Hose V series

Since both ends of a hose are sharp metallic edges, hose should be handled carefully.

## PAL type

### Features

- Heat resistant flexible hose constructed of special laminated aluminum foil and galvanized steel sheet.
- Easy to store, keep, and transport due to light weight and free contractibility.
- Continuous usable temperature is about 130 °C or lower.
- Although using galvanized steel sheet as a reinforced material, it complies with RoHS.

**Note:** Excels in flexibility but is not suited for repeated flexing.

**Note:** Not suited for applications requiring air-tightness.

### Applications

- Suited for air conditioning, especially for air conveying and exhaust in a ceiling.

Hose



Structure (Cross-Section View)



Sizes and properties (PAL-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Allowable Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------|-------------------|-----------------|
| 50               | 50.8±1.0  | 54.3      | 20.0       | 0.032 [0.33]                                                             | -17.0 [-130]                                                        | 60                                    | 360               | 5               |
| 65               | 65.5±1.0  | 69.5      | 20.0       | 0.029 [0.30]                                                             | -17.0 [-130]                                                        | 70                                    | 410               |                 |
| 75               | 75.5±1.0  | 79.5      | 20.0       | 0.025 [0.25]                                                             | -15.0 [-115]                                                        | 80                                    | 480               |                 |
| 90               | 91.0±1.0  | 95.0      | 24.0       | 0.020 [0.20]                                                             | -13.0 [-100]                                                        | 95                                    | 480               |                 |
| 100              | 101.5±1.5 | 105.0     | 24.0       | 0.020 [0.20]                                                             | -13.0 [-100]                                                        | 105                                   | 540               |                 |
| 125              | 126.0±1.5 | 130.0     | 24.0       | 0.018 [0.18]                                                             | -13.0 [-100]                                                        | 125                                   | 695               |                 |
| 150              | 152.0±1.5 | 156.0     | 24.0       | 0.015 [0.15]                                                             | -9.0 [-70]                                                          | 150                                   | 815               |                 |
| (175)            | 177.0±2.0 | 181.0     | 24.0       | 0.013 [0.13]                                                             | -8.0 [-62]                                                          | 175                                   | 980               |                 |
| 200              | 202.0±2.0 | 206.0     | 24.0       | 0.010 [0.10]                                                             | -6.0 [-45]                                                          | 200                                   | 1,090             |                 |
| 250              | 253.5±2.5 | 257.0     | 24.0       | 0.008 [0.08]                                                             | -3.0 [-23]                                                          | 255                                   | 1,345             |                 |
| (275)            | 278.0±2.5 | 282.0     | 24.0       | 0.006 [0.06]                                                             | -3.0 [-23]                                                          | 280                                   | 1,540             |                 |
| 300              | 304.0±3.0 | 308.0     | 24.0       | 0.005 [0.05]                                                             | -3.0 [-23]                                                          | 305                                   | 1,680             |                 |

( ) are custom-made products.

Nipple for connecting with steel pipe or two hoses connecting is also available.

Please refer to P53.

## AG type

### Features

- Heat resistant flexible hose constructed of special laminated aluminum foil, glass-cloth and galvanized steel sheet.
- Light in weight, excels in flame and heat resistance.
- Continuous usable temperature is about 180 °C or lower.
- Special aluminum and glass cloth sheet which is used as a material is Class 1 Fire-Proof Material prescribed in JIS A1322.
- Although using galvanized steel sheet as a reinforced material, it complies with RoHS.

**Note:** Excels in flexibility but is not suited for repeated flexing.

**Note:** Not suited for applications requiring air-tightness.

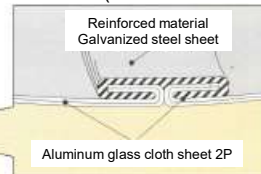
### Applications

- Suited for air conditioning, and air conveying and exhaust for hot air generation & circulation system.

Hose



Structure (Cross-Section View)



Sizes and properties (AG-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 50               | 50.8±1.0  | 55.3      | 20.0       | 0.032 [0.33]                                                             | -17.0 [-130]                                                        | 60                          | 365               | 5               |
| 65               | 65.5±1.0  | 70.5      | 20.0       | 0.029 [0.30]                                                             | -17.0 [-130]                                                        | 70                          | 470               |                 |
| 75               | 75.5±1.0  | 80.5      | 20.0       | 0.025 [0.25]                                                             | -15.0 [-115]                                                        | 80                          | 525               |                 |
| 90               | 91.0±1.0  | 96.0      | 24.0       | 0.020 [0.20]                                                             | -13.0 [-100]                                                        | 95                          | 560               |                 |
| 100              | 101.5±1.5 | 106.0     | 24.0       | 0.020 [0.20]                                                             | -13.0 [-100]                                                        | 105                         | 630               |                 |
| 125              | 126.0±1.5 | 131.0     | 24.0       | 0.018 [0.18]                                                             | -13.0 [-100]                                                        | 125                         | 780               |                 |
| 150              | 152.0±1.5 | 157.0     | 24.0       | 0.015 [0.15]                                                             | -9.0 [-70]                                                          | 150                         | 930               |                 |
| (175)            | 177.0±2.0 | 182.0     | 24.0       | 0.013 [0.13]                                                             | -8.0 [-62]                                                          | 175                         | 1,110             |                 |
| 200              | 202.0±2.0 | 207.0     | 24.0       | 0.010 [0.10]                                                             | -6.0 [-45]                                                          | 200                         | 1,210             |                 |
| 250              | 253.5±2.5 | 258.5     | 24.0       | 0.008 [0.08]                                                             | -3.0 [-23]                                                          | 255                         | 1,580             |                 |
| (275)            | 278.0±2.5 | 283.5     | 24.0       | 0.006 [0.06]                                                             | -3.0 [-23]                                                          | 280                         | 1,730             |                 |
| 300              | 304.0±3.0 | 309.5     | 24.0       | 0.005 [0.05]                                                             | -3.0 [-23]                                                          | 305                         | 1,840             |                 |

( ) are custom-made products.

Nipple for connecting with steel pipe or two hoses connecting is also available.

Please refer to P53.

# TIFLEX™ Hose V series

Since both ends of a hose are sharp metallic edges, hose should be handled carefully.

## FP type

### Features

- Constructed of special coated glass cloth and stainless-steel copper plate (SUS304).
- Easy to store, keep, and transport due to light weight and free contractibility.
- Continuous usable temperature is 250°C or lower. Therefore it can be used in higher heat range than PAL and AG type.
- Special coated glass cloth sheet which is used as a material is Class 1 Fire-Proof Material prescribed in JIS A1322.

**Note:** Not suited for repeated flexing, but is better than PAL type and AG type.

**Note:** Not suited for applications requiring airtightness.

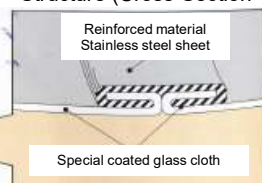
### Applications

- Suit for duct of hot air generation & circulation system.

Hose



Structure (Cross-Section View)



Sizes and properties (FP-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Allowable Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------|-------------------|-----------------|
| 50               | 50.8±1.0  | 55.3      | 20.0       | 0.018 [0.18]                                                             | -17.0 [-130]                                                        | 60                                    | 365               | 5               |
| 65               | 65.5±1.0  | 70.5      | 20.0       | 0.015 [0.15]                                                             | -17.0 [-130]                                                        | 70                                    | 475               |                 |
| 75               | 75.5±1.0  | 80.5      | 20.0       | 0.013 [0.13]                                                             | -15.0 [-115]                                                        | 80                                    | 550               |                 |
| 90               | 91.0±1.0  | 96.0      | 24.0       | 0.010 [0.10]                                                             | -13.0 [-100]                                                        | 95                                    | 565               |                 |
| 100              | 101.5±1.5 | 106.0     | 24.0       | 0.010 [0.10]                                                             | -13.0 [-100]                                                        | 105                                   | 625               |                 |
| 125              | 126.0±1.5 | 131.0     | 24.0       | 0.010 [0.10]                                                             | -13.0 [-100]                                                        | 125                                   | 790               |                 |
| 150              | 152.0±1.5 | 157.0     | 24.0       | 0.008 [0.08]                                                             | -9.0 [-70]                                                          | 150                                   | 980               |                 |
| (175)            | 177.0±2.0 | 182.0     | 24.0       | 0.006 [0.06]                                                             | -8.0 [-62]                                                          | 175                                   | 1,140             |                 |
| 200              | 202.0±2.0 | 207.0     | 24.0       | 0.005 [0.05]                                                             | -6.0 [-45]                                                          | 200                                   | 1,300             |                 |
| 250              | 253.5±2.5 | 258.5     | 24.0       | 0.003 [0.03]                                                             | -3.0 [-23]                                                          | 255                                   | 1,610             |                 |
| (275)            | 278.0±2.5 | 283.5     | 24.0       | 0.003 [0.03]                                                             | -3.0 [-23]                                                          | 280                                   | 1,780             |                 |
| 300              | 304.0±3.0 | 309.5     | 24.0       | 0.002 [0.02]                                                             | -3.0 [-23]                                                          | 305                                   | 1,910             |                 |

( ) are custom-made products.

Nipple for connecting with steel pipe or two hoses connecting is also available.

Please refer to P53.

## SUS type

### Features

- Constructed entirely of stainless steel (SUS 304).
- Continuous usable temperature is 400°C or lower.

**Note:** Excels in heat resistance and can be bent but is not suited for repeated flexing.

**Note:** Not suited for applications requiring airtightness.

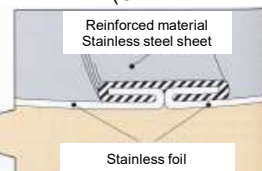
### Applications

- Suit for fixed piping of equipments for pollution control, devices for physics & chemistry, and burning equipment.

Hose



Structure (Cross-Section View)



Sizes and properties (SUS-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20°C)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|-------------------|-----------------|
| 50               | 50.8±1.0  | 53.8      | 20.0       | 0.018 [0.18]                                                             | -21.0 [-160]                                                        | 60                          | 330               | 2               |
| 65               | 65.5±1.0  | 69.0      | 20.0       | 0.015 [0.15]                                                             | -21.0 [-160]                                                        | 70                          | 420               |                 |
| 75               | 75.5±1.0  | 79.0      | 20.0       | 0.013 [0.13]                                                             | -21.0 [-160]                                                        | 80                          | 480               |                 |
| 90               | 91.0±1.0  | 94.5      | 24.0       | 0.010 [0.10]                                                             | -17.0 [-130]                                                        | 95                          | 545               |                 |
| 100              | 101.5±1.5 | 105.0     | 24.0       | 0.010 [0.10]                                                             | -15.0 [-115]                                                        | 105                         | 560               |                 |
| 125              | 126.0±1.5 | 129.5     | 24.0       | 0.010 [0.10]                                                             | -15.0 [-115]                                                        | 125                         | 700               |                 |
| 150              | 152.0±1.5 | 155.5     | 24.0       | 0.008 [0.08]                                                             | -13.0 [-100]                                                        | 150                         | 825               |                 |
| (175)            | 177.0±2.0 | 180.5     | 24.0       | 0.006 [0.06]                                                             | -10.0 [-78]                                                         | 175                         | 1,060             |                 |
| 200              | 202.0±2.0 | 205.5     | 24.0       | 0.005 [0.05]                                                             | -9.0 [-70]                                                          | 200                         | 1,080             |                 |
| 250              | 253.5±2.5 | 257.0     | 24.0       | 0.003 [0.03]                                                             | -6.0 [-45]                                                          | 255                         | 1,400             |                 |
| (275)            | 278.0±2.5 | 281.5     | 24.0       | 0.003 [0.03]                                                             | -6.0 [-45]                                                          | 280                         | 1,550             |                 |
| 300              | 304.0±3.0 | 307.5     | 24.0       | 0.002 [0.02]                                                             | -6.0 [-45]                                                          | 305                         | 1,650             |                 |

( ) are custom-made products.

Nipple for connecting with steel pipe or two hoses connecting is also available.

Please refer to P53.

# Silicone Rubber Hoses

*Heat resistant hose with air tightness.*

*Duct hose, cleaner hose, vacuum hose, and suction hose can be selected according to the application and usage conditions.*

# TIFLEX™ Silicone Rubber Duct Hose

(Custom-made products)

Since wire might be exposed from a hose end, hose should be handled carefully.

## TS type

### Features

- Light weighted and flexible duct hose which is constructed of heat resistant fabric of polyester cloth (Tetron) coated with silicone rubber and reinforcing wire.
- Excels in heat and cold resistance, and can be used at -50 ~ 150°C.

### Applications

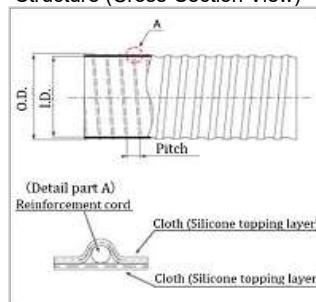
- For conveying and exhaust of hot air, exhaust gas and etc.

Hose



\*Also able to make with cuff shape at the hose ends.

Structure (Cross-Section View)



## GS type

### Features

- Light weighted and flexible duct hose which is constructed of heat resistant glass cloth coated with silicone rubber and reinforcing wire.
- Excels in heat and cold resistance, and can be used at -50 ~ 200°C.

### Applications

- For conveying and exhaust of hot air, exhaust gas and etc.

Dimension and property (SRDH[TS]/[GS]-□)

| Nominal Dia.<br>(φ) | I.D.<br>(mm) | O.D.<br>(mm) | Pitch<br>(mm) |
|---------------------|--------------|--------------|---------------|
| 25                  | 25.0         | (28.0)       | 8.0           |
| 38                  | 38.0         | (41.0)       | 8.0           |
| 50                  | 50.0         | (53.0)       | 10.0          |
| 65                  | 65.0         | (68.0)       | 10.0          |
| 75                  | 75.0         | (79.0)       | 10.0          |
| 76                  | 76.3         | (80.0)       | 10.0          |
| 90                  | 90.0         | (94.0)       | 12.0          |
| 100                 | 100.0        | (104.0)      | 12.0          |
| 101                 | 101.3        | (105.0)      | 12.0          |
| 125                 | 126.5        | (132.0)      | 13.0          |
| 140                 | 139.5        | (145.0)      | 13.0          |
| 150                 | 150.0        | (155.0)      | 13.0          |
| 165                 | 165.0        | (170.0)      | 13.0          |
| 175                 | 178.0        | (183.0)      | 15.0          |
| 200                 | 203.0        | (208.0)      | 15.0          |
| 254                 | 254.0        | (259.0)      | 16.5          |

These above mentioned values are not guaranteed values, but standard values.

These standards may change without prior notice.

Standard length is 2m. For a diameter or length other than those mentioned above, please consult us. Outer diameter is not guaranteed value, but standard value.



# TIFLEX™ Silicone Rubber Cleaner Hose (Custom-made products)

## TSC type

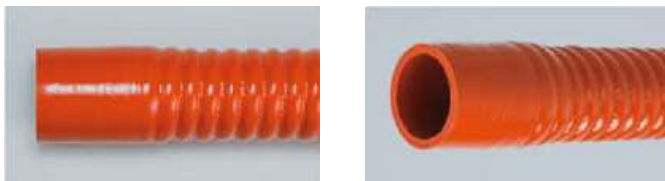
### Features

- Light weighted and flexible cleaner hose constructed of heat resistant fabric of polyester cloth coated with silicone rubber, silicone rubber, and reinforcing wire.
- Excels in heat and cold resistance. Continuously usable temperature is -50°C~150°C.

### Applications

- Suited for suction exhaust gas of solvent and etc.

Hose



Structure (Cross-Section View)



Dimension and property (SRDH[TS]/[GS]-□)

| Nominal Dia.<br>( $\phi$ ) | I.D.<br>(mm) | O.D.<br>(mm) | Pitch<br>(mm) |
|----------------------------|--------------|--------------|---------------|
| 25                         | 25.0         | (28.0)       | 10.0          |
| 38                         | 38.0         | (46.0)       | 10.0          |
| 50                         | 50.0         | (59.0)       | 12.0          |
| 65                         | 65.0         | (74.0)       | 13.0          |
| 75                         | 75.0         | (84.0)       | 14.0          |
| 76                         | 76.3         | (85.0)       | 14.0          |
| 90                         | 90.0         | (101.0)      | 14.0          |
| 100                        | 100.0        | (111.0)      | 14.0          |
| 101                        | 101.3        | (112.0)      | 14.0          |
| 125                        | 126.5        | (139.0)      | 15.0          |
| 140                        | 139.5        | (152.0)      | 17.0          |
| 150                        | 150.0        | (163.0)      | 17.0          |
| 165                        | 165.0        | (178.0)      | 19.0          |
| 175                        | 178.0        | (191.0)      | 22.0          |
| 200                        | 203.0        | (216.0)      | 22.0          |

These above mentioned values are not guaranteed, but standard ones.

These standards may change without prior notice.

Standard length is 2m. For a diameter or length other than those mentioned above, please consult us.

## GSC type

### Features

- Light weighted and flexible duct hose constructed of heat resistant fabric of glass cloth silicone rubber, silicone rubber, and reinforcing wire.
- Excels in heat and cold resistance. Continuously usable temperature is -50°C~200°C.

### Applications

- Suited for suction exhaust gas of solvent and etc.  
Suited for suction exhaust gas of solvent and etc.

# TIFLEX™ Silicone Rubber Vacuum Hose (Custom-made products)

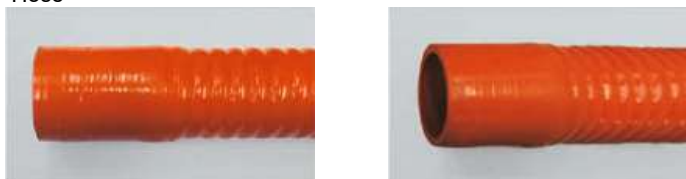
As custom-made, hoses with white color inner surface are also available. Please consult us.

## TSV type

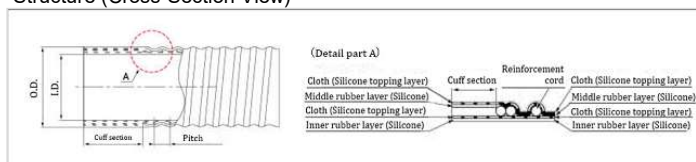
### Features

- Duct hose which is constructed of heat resistant fabric of polyester cloth coated with silicone rubber and reinforcing wire.
- Excels in heat and cold resistance. Continuously usable temperature is -50°C~150°C.

Hose



Structure (Cross-Section View)



## GSV type

### Features

- Duct hose constructed of heat resistant fabric of glass cloth silicone rubber, silicone rubber, and reinforcing wire.
- Excels in heat and cold resistance. Continuously usable temperature is -50°C~200°C.

### Applications

- Because there is a rubber layer in the hose inner surface, and used to suction that require wear resistance.

Dimension and property (SRDH[TS]/[GS]-□)

| Nominal Dia.<br>(φ) | I.D.<br>(mm) | O.D.<br>(mm) | Pitch<br>(mm) |
|---------------------|--------------|--------------|---------------|
| 25                  | 25.0         | (36.0)       | 10.0          |
| 38                  | 38.0         | (49.0)       | 11.0          |
| 50                  | 50.0         | (62.0)       | 12.0          |
| 65                  | 65.0         | (76.0)       | 13.0          |
| 75                  | 75.0         | (86.0)       | 14.0          |
| 76                  | 76.3         | (87.0)       | 14.0          |
| 90                  | 90.0         | (102.0)      | 14.0          |
| 100                 | 100.0        | (113.0)      | 14.0          |
| 101                 | 101.3        | (114.0)      | 14.0          |
| 125                 | 126.5        | (141.0)      | 15.0          |
| 140                 | 139.5        | (154.0)      | 17.0          |
| 150                 | 150.0        | (164.0)      | 17.0          |
| 165                 | 165.0        | (179.0)      | 19.0          |
| 175                 | 178.0        | (192.0)      | 22.0          |
| 200                 | 203.0        | (217.0)      | 22.0          |
| 254                 | 254.0        | (268.0)      | 22.0          |

These above mentioned values are not guaranteed, but standard ones.

These standards may change without prior notice.

Standard length is 2m. For a diameter or length other than those mentioned above, please consult us.

# TIFLEX™ Silicone Rubber Suction Hose (Custom-made products)

As custom-made, hoses with white color inner surface are also available. Please consult us.

## TSH type

### Features

- Duct hose constructed of heat resistant fabric of glass cloth silicone rubber, silicone rubber, and reinforcing wire.
- Excels in heat and cold resistance. Continuously usable temperature is -50°C~200°C.
- Excels in abrasion resistance and pressure resistance due to three rubber layers in hose inner, middle and outer ones.

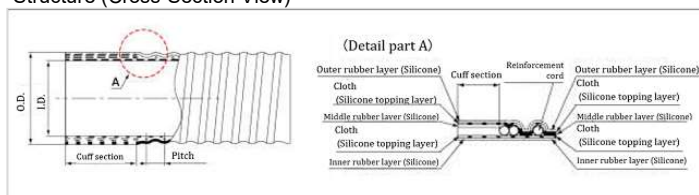
### Applications

- Used for suction and pumping of particulate material and liquid at high temperatures.

Hose



Structure (Cross-Section View)



## GSH type

### Features

- Duct hose constructed of heat resistant fabric of glass cloth silicone rubber, silicone rubber, and reinforcing wire.
- Excels in heat and cold resistance. Continuously usable temperature is -50°C~200°C.
- Excels in abrasion resistance and pressure resistance due to three rubber layers in hose inner, middle and outer ones.

### Applications

- Used for suction and pumping of particulate material and liquid at high temperatures.

Dimension and property (SRDH[TS]/[GS]-□)

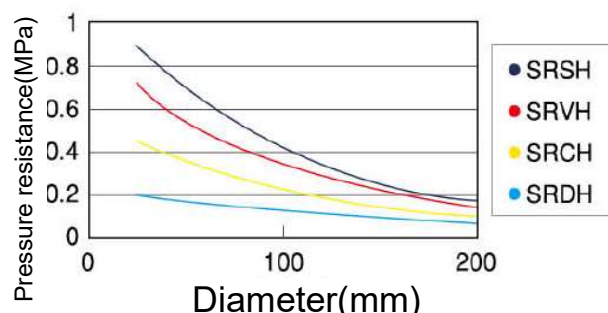
| Nominal Dia.<br>( $\phi$ ) | I.D.<br>(mm) | O.D.<br>(mm) | Pitch<br>(mm) |
|----------------------------|--------------|--------------|---------------|
| 25                         | 25.0         | (43.0)       | 10.0          |
| 38                         | 38.0         | (57.0)       | 11.0          |
| 50                         | 50.0         | (69.0)       | 12.0          |
| 65                         | 65.0         | (84.0)       | 13.0          |
| 76                         | 76.3         | (96.0)       | 14.0          |
| 90                         | 90.0         | (110.0)      | 14.0          |
| 100                        | 100.0        | (120.0)      | 14.0          |
| 101                        | 101.3        | (121.0)      | 14.0          |
| 125                        | 126.5        | (147.0)      | 15.0          |
| 140                        | 139.5        | (160.0)      | 17.5          |
| 150                        | 150.0        | (170.0)      | 17.5          |
| 165                        | 165.0        | (185.0)      | 20.0          |

These above mentioned values are not guaranteed, but standard ones.

These standards may change without prior notice.

Standard length is 2m. For a diameter or length other than those mentioned above, please consult us.

### Guideline for pressure resistance of each SR



This table shows a guideline for pressure resistance of main SR hoses, and when used in a straight line at room temperature. Tests by user are advised when used in a not straight line and/or at not room temperature.

# Non-PVC Hoses

*Eco-friendly, flexible, and lightweight.*

# TIFLEX™ Ti-Eco Light Hose FF type (Custom-made products)

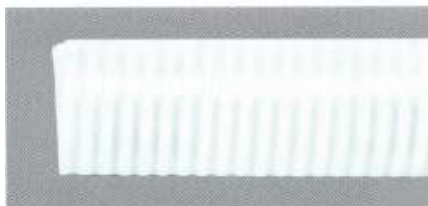
## Features

- We use environmental-friendly materials without using phthalate plasticizers.
- Lightweight makes it easy to be handled.  
(About 30% lighter in weight than our current PVC products.)
- Complies with Standard of Apparatus, Containers and Packaging based on Japanese Ministry of Health, Labour and Welfare Notification No.370, Food Sanitation Act.  
(Except for fat oil and fatty foods.)

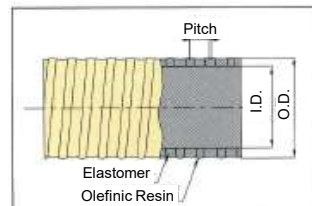
## Applications

- For general suction and draining.
- For suction and draining of agriculture, civil engineering work and etc.
- For food.  
(Except for fat oil and fatty foods.)

Hose



Structure (Cross-Section View)



Sizes and properties (ELFF-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (at -0.1MPa)<br>(°C)※ | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|-----------------------------------------|-----------------------------|-------------------|-----------------|
| 38               | 38.1±1.0  | 45.7      | 7.0        | 0.20 [2.0]                                                               | 95.0                                    | 450                         | 435               | 20              |
| 50               | 50.8±1.0  | 59.2      | 8.0        | 0.20 [2.0]                                                               | 75.0                                    | 560                         | 625               |                 |
| 75               | 76.2±1.0  | 86.4      | 9.0        | 0.15 [1.5]                                                               | 65.0                                    | 900                         | 1,155             |                 |
| 100              | 101.6±1.5 | 116.0     | 14.0       | 0.10 [1.0]                                                               | 60.0                                    | 1,500                       | 2,100             |                 |

# TIFLEX™ Ti-Eco Light Hose WT type

## Features

- We use environmental-friendly materials without using phthalate plasticizers.
- Spiral shape of outside, good flexibility and lightweight make it easy to be handled.  
(About 30% lighter in weight than our current PVC products.)
- Complies with Standard of Apparatus, Containers and Packaging based on Japanese Ministry of Health, Labour and Welfare Notification No.370, Food Sanitation Act.  
(Except for fat oil and fatty foods.)

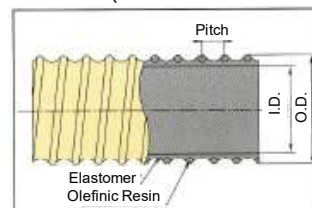
## Applications

- For general suction and draining.  
(particularly suitable for suction)
- For food.  
(Except for fat oil and fatty foods.)

Hose



Structure (Cross-Section View)



Sizes and properties (ELWT-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (at -0.1MPa)<br>(°C)※ | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|-----------------------------------------|-----------------------------|-------------------|-----------------|
| 38               | 38.1±0.5  | 47.5      | 9.5        | 0.10 [1.0]                                                               | 70.0                                    | 100                         | 360               | 20              |
| 50               | 50.8±1.0  | 62.0      | 11.0       | 0.10 [1.0]                                                               | 70.0                                    | 120                         | 565               |                 |
| 65               | 63.5±1.0  | 76.5      | 13.5       | 0.10 [1.0]                                                               | 70.0                                    | 150                         | 735               |                 |
| 75               | 76.2±1.0  | 91.5      | 15.0       | 0.10 [1.0]                                                               | 70.0                                    | 200                         | 1050              |                 |
| 100              | 101.6±1.5 | 120.0     | 16.5       | 0.10 [1.0]                                                               | 70.0                                    | 300                         | 1630              |                 |

# TIFLEX™ Ti-Eco Light Hose Antistatic W type

## Features

- Excels in static prevention effects by use of antistatic build-up material and conductive fiber.
- We use environmental-friendly materials without using phthalate plasticizers.
- Spiral shape of outside, good flexibility and lightweight make it easy to be handled.  
(About 30% lighter in weight than our current PVC products.)
- Complies with Standard of Apparatus, Containers and Packaging based on Japanese Ministry of Health, Labour and Welfare Notification No.370, Food Sanitation Act.  
(Except for fat oil and fatty foods.)

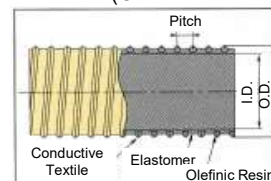
## Applications

- Conveying of plastic pellets.
- Conveying of powders and grains.
- For food.  
(Except for fat oil and fatty foods.)

Hose



Structure (Cross-Section View)



Sizes and properties (ELW [D] -□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (at -0.1MPa)<br>(°C)※ | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|-----------------------------------------|-----------------------------|-------------------|-----------------|
| 25               | 25.0±0.5  | 33.0      | 7.6        | 0.10 [1.0]                                                               | 70                                      | 70                          | 185               | 20              |
| 38               | 38.1±0.5  | 48.0      | 9.5        | 0.10 [1.0]                                                               | 70                                      | 100                         | 360               |                 |
| 48.6             | 49.0±1.0  | 60.0      | 11.0       | 0.10 [1.0]                                                               | 70                                      | 120                         | 540               |                 |
| 50               | 50.8±1.0  | 62.0      | 11.0       | 0.10 [1.0]                                                               | 70                                      | 120                         | 560               |                 |
| 60               | 60.5±1.0  | 73.0      | 13.5       | 0.10 [1.0]                                                               | 70                                      | 150                         | 730               |                 |
| 65               | 63.5±1.0  | 76.5      | 13.5       | 0.10 [1.0]                                                               | 70                                      | 150                         | 760               |                 |
| 75               | 76.2±1.0  | 91.0      | 15.0       | 0.10 [1.0]                                                               | 70                                      | 200                         | 1,100             |                 |
| 100              | 101.6±1.5 | 119.5     | 16.5       | 0.10 [1.0]                                                               | 70                                      | 300                         | 1,660             |                 |

# TIFLEX™ Ti-Eco Light Hose WS type

(Custom-made products)

\* Ti-Eco Light WS type is right-handed.

## Features

- Excels in abrasion resistance by use of special elastomer at hose soft part.  
Abrasion resistance: About 5 times more.  
(Compared to our PVC TIFLEX™ hose WS type. By test result performed at normal temperature)
- We use environmental-friendly materials without using phthalate plasticizers.
- Good flexibility and lightweight make it easy to be handled.
- Excels in pressure resistance due to containing reinforcement fiber.

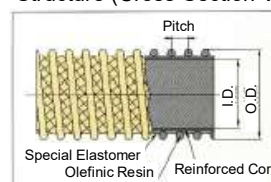
## Applications

- Conveying cleaning water in an atomic power plant.
- For general draining. (delivery/suction)

Hose



Structure (Cross-Section View)



Sizes and properties (ELWS-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Deformation Temp. (at -0.1MPa)<br>(°C)※ | Bending Radius (mm or more) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|--------------------------------------------------------------------------|-----------------------------------------|-----------------------------|-------------------|-----------------|
| 25               | 25.0±0.5  | 36.8      | 8.0        | 0.50 [5.1]                                                               | 90                                      | 100                         | 320               | 20              |
| 38               | 38.1±0.5  | 52.4      | 9.0        | 0.50 [5.1]                                                               | 90                                      | 150                         | 610               |                 |
| 50               | 50.8±1.0  | 66.6      | 10.0       | 0.50 [5.1]                                                               | 90                                      | 200                         | 870               |                 |
| 75               | 76.2±1.0  | 92.2      | 15.1       | 0.50 [5.1]                                                               | 90                                      | 350                         | 1260              |                 |
| 100              | 101.6±1.5 | 120.5     | 16.5       | 0.50 [5.1]                                                               | 90                                      | 500                         | 1730              |                 |

Wash with hot water at a temperature of 80 °C or less, a pressure of 0.1 MPa or less, and a pressurization time of 3 minutes or less.

# TIFLEX™ Ti-Eco Light Hose GL type

## Features

- Resistant to repeated bending.
- Lightweight and excels in flexibility.  
(About 40% lighter in weight than our current PVC products.)
- We use environmental-friendly materials without using phthalate plasticizers.
- Complies with Standard of Apparatus, Containers and Packaging based on Japanese Ministry of Health, Labour and Welfare Notification No.370, Food Sanitation Act.  
(Except for fat oil and fatty foods.)

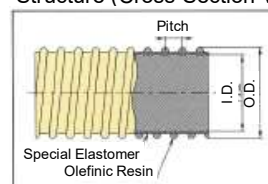
## Applications

- Duct for general air induction and exhaust.
- Duct for exhaust ventilation for general industrial machinery.
- Duct for air conditioning.

Hose



Structure (Cross-Section View)



Sizes and properties (ELGL-□)

| Nominal Dia. (φ) | I.D. (mm) | O.D. (mm) | Pitch (mm) | Working Pressure (20℃)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Allowable Reduced Pressure (20℃)<br>KPa or less/<br>[mmHg or less] | Bending Radius (mm) | Ref. Weight (g/m) | Std. Length (m) |
|------------------|-----------|-----------|------------|-------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------|-------------------|-----------------|
| 32               | 32.0±1.0  | 39.5      | 8.0        | 0.06 [0.6]                                                              | -40.0 [-300]                                                       | 50                  | 180               | 20              |
| 38               | 38.1±1.0  | 45.6      | 9.0        | 0.06 [0.6]                                                              | -40.0 [-300]                                                       | 50                  | 195               |                 |
| 50               | 50.8±1.0  | 58.5      | 12.0       | 0.05 [0.5]                                                              | -40.0 [-300]                                                       | 60                  | 225               |                 |
| 65               | 63.5±1.0  | 71.8      | 12.0       | 0.04 [0.4]                                                              | -20.0 [-150]                                                       | 70                  | 325               |                 |
| 75               | 76.2±1.0  | 85.2      | 14.5       | 0.04 [0.4]                                                              | -20.0 [-150]                                                       | 90                  | 390               |                 |
| 90               | 89.0±1.5  | 98.2      | 14.5       | 0.03 [0.3]                                                              | -15.0 [-113]                                                       | 100                 | 475               |                 |
| 100              | 101.6±1.5 | 110.8     | 14.5       | 0.03 [0.3]                                                              | -15.0 [-113]                                                       | 110                 | 540               |                 |

\*Exclusive cuffs are also available.

# Other Hoses

*Hoses developed for special applications.*

# TIFLEX™ Hose NH-1 type (Custom-made products)

## Features

- Excels in stretchability, bending, and also heat resistance.
  - Able to improve the working efficiency, reduce the transportation cost significantly and save the inventory space because it excels in durability and can be contacted to 1/4 in length.
  - Light in weight and excels in noise reduction and condensation prevention performance by use of special flame retardant fabric as liner material.
- \* Qualified product as MLIT noncombustible material (Ministry of Land, Infrastructure, Transport and Tourism). No. NM-0601

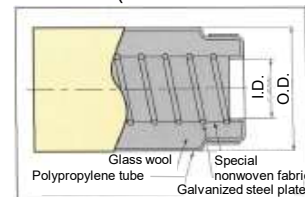
## Applications

- Air-conditioning branch pipe of large-scale architectural structure.
  - Various types of air-conditioning branch pipe.
- \* Air-conditioning duct hose which is a qualified product of MLIT noncombustible material.
- \* Please refer to P65 for pressure loss data.

Hose



Structure (Cross-Section View)



Sizes and properties (NH1-□)

| Nominal Dia.<br>( $\phi$ ) | 90 Degrees<br>Minimum Bending Radius<br>(mm) | Product Length<br>(m)                  |
|----------------------------|----------------------------------------------|----------------------------------------|
| 100                        | 190                                          | 1, 2, 3,<br>4, 5, 6,<br>7, 8, 9,<br>10 |
| 125                        | 230                                          |                                        |
| 150                        | 270                                          |                                        |
| 175                        | 300                                          |                                        |
| 200                        | 450                                          |                                        |
| 225                        | 500                                          |                                        |
| 250                        | 550                                          |                                        |
| 275                        | 600                                          |                                        |
| 300                        | 650                                          |                                        |
| 350                        | 920                                          |                                        |
| 400                        | 1,050                                        |                                        |

\* Please consult us for lengths other than those mentioned above.

# TIFLEX™ Hinet Hose

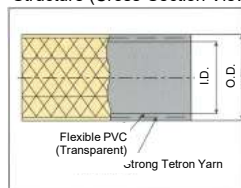
## Features

- Excellent transparency making it possible to confirm the contents.
- No elongation observed under pressure due to warp reinforcement.
- Excels in cold resistance, heat resistance, and chemical resistance.
- Complies with Standard of Apparatus, Containers and Packaging based on Japanese Ministry of Health, Labour and Welfare Notification No.370, Food Sanitation Act.  
(Except for fat oil and fatty foods.)

Hose



Structure (Cross-Section View)



Sizes and properties (HINET-□)

| Nominal Dia.<br>(φ) | I.D. x O.D.<br>(mm) | Working Pressure<br>(20°C)<br>MPa or less/<br>[kgf/cm <sup>2</sup> or less] | Bending Radius<br>(mm or more) | Ref. Weight<br>(g/m) | Std. Length<br>(m) |
|---------------------|---------------------|-----------------------------------------------------------------------------|--------------------------------|----------------------|--------------------|
| 4                   | 4.0 x 9.0           | 1.0[10.2]                                                                   | 35                             | 65                   | 100                |
| 6                   | 6.0 x 11.0          | 1.0[10.2]                                                                   | 40                             | 85                   |                    |
| 8                   | 8.0 x 13.5          | 1.0[10.2]                                                                   | 55                             | 110                  |                    |
| 9                   | 9.0 x 15.0          | 1.0[10.2]                                                                   | 60                             | 140                  |                    |
| 10                  | 10.0 x 16.0         | 1.0[10.2]                                                                   | 70                             | 160                  |                    |
| 12                  | 12.0 x 18.0         | 1.0[10.2]                                                                   | 75                             | 170                  | 50, 100            |
| 15                  | 15.0 x 22.0         | 0.8[8.2]                                                                    | 95                             | 245                  |                    |
| 19                  | 19.0 x 26.0         | 0.8[8.2]                                                                    | 135                            | 310                  | 50                 |
| 25                  | 25.0 x 33.0         | 0.6[6.1]                                                                    | 165                            | 440                  |                    |
| 32                  | 32.0 x 41.0         | 0.6[6.1]                                                                    | 210                            | 650                  |                    |
| 38                  | 38.0 x 48.0         | 0.5[5.1]                                                                    | 255                            | 840                  |                    |
| 50                  | 50.0 x 62.0         | 0.5[5.1]                                                                    | 380                            | 1,280                | 40                 |

## Applications

- Water supplying and draining for equipments.
- For piping and drain hose of pneumatic/air-conditioning equipment.
- For washing of ship, vehicle and etc.
- For conveying of powders, grains, chemicals and etc.
- For sprayer.
- For civil engineering and construction.  
(Please consult us on hoses for special usage such as shower hoses and etc.)

## Fitting Method with Duct Hoses

Put a hose directly in fitted hose or use cuffs.

In case that outer diameter of a fitted hose is larger than inner diameter of a hose,  
a cuff must be used because diameter of the hose cannot be expanded.

Use spiral wire band when not use a cuff.

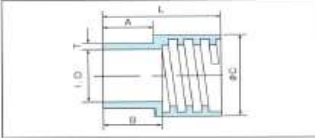
Wire band and ABA band is also applicable when use a cuff.

## Cuff for TIFLEX™ Hose GL, GL-E, and GL-ST type

Cuff



Structure (Cross-Section View)



Sizes

| Nominal Dia. (ϕ) | I.D. (mm) | L (mm) | A (mm) | B (mm) | T (mm) | ϕ C (mm) | Material                       |
|------------------|-----------|--------|--------|--------|--------|----------|--------------------------------|
| 25               | 25        | 55     | 27     | 30     | 2      | 38       | Soft Polyvinyl Chloride (Gray) |
| 32               | 32        | 65     | 37     | 40     | 2      | 45       |                                |
| 38               | 38        | 71     | 37     | 40     | 3      | 53       |                                |
| 50               | 50        | 73     | 37     | 40     | 3      | 68       |                                |
| 65               | 65        | 74     | 38     | 40     | 3      | 80       |                                |
| 75               | 75        | 80     | 40     | 42     | 3      | 95       |                                |
| 90               | 90        | 87     | 44     | 46     | 3      | 106      |                                |
| 100              | 100       | 106    | 53     | 55     | 3.5    | 119      |                                |
| 125              | 125       | 132    | 63     | 66     | 4      | 145      |                                |
| 150              | 150       | 162    | 83     | 86     | 3.5    | 173      | Synthetic Rubber (EPDM: Gray)  |
| 200              | 200       | 230    | 110    | 125    | 5      | 222      |                                |

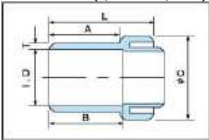
\* Please consult us for sizes other than those mentioned above.

## Cuff for TIFLEX™ Hose N type

ϕ 16 ~ ϕ 32



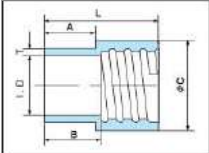
Structure (ϕ 16 ~ ϕ 32)



ϕ 38 ~ ϕ 250



Structure (ϕ 38 ~ ϕ 250)



Sizes

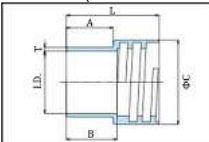
| Nominal Dia. (ϕ) | I.D. (mm) | L (mm) | A (mm) | B (mm) | T (mm) | ϕ C (mm) | Material                       |
|------------------|-----------|--------|--------|--------|--------|----------|--------------------------------|
| 16               | 15.8      | 35     | 23     | 23     | 2      | 25.5     | Soft Polyvinyl Chloride        |
| 19               | 19.5      | 42     | 25     | 25     | 2      | 29       |                                |
| 25               | 25        | 45     | 24     | 21     | 2      | 37       |                                |
| 32               | 32.5      | 50     | 28     | 28     | 2.5    | 41.5     |                                |
| 38               | 38        | 75     | 36     | 40     | 3      | 48       |                                |
| 45               | 45        | 65.5   | 27.3   | 30     | 3      | 59       |                                |
| 50               | 50        | 75     | 37     | 40     | 3      | 64.5     |                                |
| 65               | 65        | 81     | 43     | 45     | 3      | 77.5     |                                |
| 75               | 75        | 80     | 42     | 45     | 3      | 89.5     |                                |
| 90               | 90        | 89     | 45     | 48     | 3      | 102.7    |                                |
| 100              | 100       | 96     | 48     | 50     | 3      | 117.8    |                                |
| 125              | 125       | 105    | 45     | 49     | 3.5    | 142.5    |                                |
| 150              | 150       | 160    | 81     | 85     | 4      | 169      |                                |
| 200              | 200       | 230    | 110    | 125    | 5      | 222      | Synthetic Rubber (EPDM: Gray)  |
| 250              | 250       | 128    | 64     | 64     | 5      | 268      | Synthetic Rubber (EPDM: Black) |

\* Please consult us for sizes other than those mentioned above.

## Cuff for TIFLEX™ Hose Abrasion Resistant GL typ



Structure (Cross-Section View)



Sizes

| Nominal Dia. (ϕ) | I.D. (mm) | L (mm) | A (mm) | B (mm) | T (mm) | ϕ C (mm) | Material                       |
|------------------|-----------|--------|--------|--------|--------|----------|--------------------------------|
| 38               | 38        | 71     | 37.5   | 40     | 3      | 51       | Synthetic Rubber (EPDM: Black) |
| 50               | 51        | 75     | 37     | 40     | 3      | 67.3     |                                |

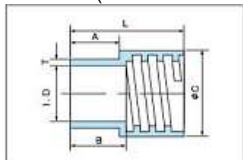
\*The hose for right-handed winding

## Cuff for TIFLEX™ Ti-Eco Light Hose GL type

Cuff



Structure (Cross-Section View)



Sizes

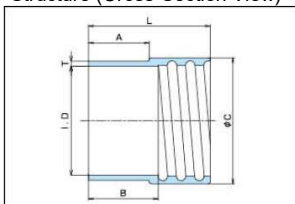
| Nominal Dia. (ϕ) | I.D. (mm) | L (mm) | A (mm) | B (mm) | T (mm) | ϕ C (mm) | Material          |
|------------------|-----------|--------|--------|--------|--------|----------|-------------------|
| 32               | 32        | 65     | 37     | 40     | 2      | 45       | Elastomer (White) |
| 38               | 38        | 71     | 37.5   | 40     | 3      | 53       |                   |
| 50               | 50        | 73     | 37     | 40     | 3      | 68       |                   |
| 65               | 65.5      | 73.8   | 37.8   | 40     | 3      | 79.5     |                   |
| 75               | 75        | 80     | 40     | 42     | 3      | 96       |                   |
| 90               | 90        | 86.5   | 43.5   | 46     | 3      | 107      |                   |
| 100              | 100       | 106    | 52.5   | 55     | 3.4    | 120      |                   |

## Cuff for TIFLEX™ Hose P, P-2 & Flame Retardant P type

Cuff



Structure (Cross-Section View)



Sizes

| Nominal Dia. (ϕ) | I.D. (mm) | L (mm) | A (mm) | B (mm) | T (mm) | ϕ C (mm) | Material                                                               |
|------------------|-----------|--------|--------|--------|--------|----------|------------------------------------------------------------------------|
| 38               | 38        | 70     | 35     | 40     | 3      | 48       | Synthetic Rubber (P type, P-2 type: EPDM) (Flame Retardant P type: CR) |
| 50               | 50        | 70     | 35     | 40     | 3      | 62       |                                                                        |
| 65               | 65        | 70     | 35     | 40     | 3      | 75       |                                                                        |
| 75               | 75        | 80     | 40     | 45     | 3      | 87       |                                                                        |
| 90               | 90        | 85     | 43     | 48     | 3      | 99       |                                                                        |
| 100              | 100       | 90     | 45     | 50     | 3      | 113      |                                                                        |
| 125              | 125       | 95     | 45     | 49     | 3.5    | 139      |                                                                        |
| 150              | 150       | 100    | 50     | 55     | 3      | 163      |                                                                        |
| 200              | 200       | 100    | 48     | 52     | 5      | 214      |                                                                        |
| 250              | 250       | 128    | 64     | 64     | 5      | 268      |                                                                        |
| 300              | 300       | 160    | 64     | 64     | 5      | 317      |                                                                        |

\* Color: P type (Dark Brown), P-2 type (White), Flame Retardant P type (Black)

# Connector for TIFLEX™ Heat Resistant Hose

## Connector for Heat Resistant Hose

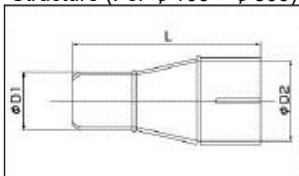
For  $\phi 100 \sim \phi 300$



### Sizes

| Hose Diameter ( $\phi$ ) | $\phi D1$ (mm) | $\phi D2$ (mm) | L (mm) | Different Type Pipe Std. O.D. (mm) | Material                         |
|--------------------------|----------------|----------------|--------|------------------------------------|----------------------------------|
| 100                      | 100            | 119            | 235    | 114.3                              | Galvanized Steel Sheet or SUS304 |
| 125                      | 125            | 144            | 235    | 139.8                              |                                  |
| 150                      | 150            | 170            | 275    | 165.2                              |                                  |
| 200                      | 200            | 220            | 275    | 216.3                              |                                  |
| 250                      | 250            | 272            | 275    | 267.4                              |                                  |
| 300                      | 300            | 323            | 275    | 318.5                              |                                  |

Structure (For  $\phi 100 \sim \phi 300$ )



*Also available for general duct hoses*

## Nipple

Nipple

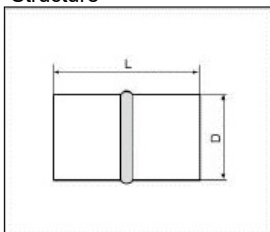


### Sizes

| Hose Diameter ( $\phi$ ) | $\phi D$ (mm) | L (mm) | Material                         |
|--------------------------|---------------|--------|----------------------------------|
| 50                       | 49            | 94     | Galvanized Steel Sheet or SUS304 |
| 75                       | 74            | 130    |                                  |
| 100                      | 98            | 130    |                                  |
| 125                      | 123           | 130    |                                  |
| 150                      | 148           | 170    |                                  |
| (175)                    | 173           | 170    |                                  |
| 200                      | 198           | 170    |                                  |
| 250                      | 248           | 170    |                                  |
| (275)                    | 273           | 170    |                                  |
| 300                      | 298           | 170    |                                  |

The nipple of SUS $\phi 50$  is custom-made product. And  $\phi D$  with 49.4. ( ) are custom-made products.

Structure



*Also available for general TIFLEX™ duct hose*

## Fitting Method of Metal Fixture

Please specify the metal fixture such as  
< Joint Sleeves with JIS 5kgf / 10kgf  
Flange, Couplers with S / M shape collar  
for Victaulic Couplings, or etc.>

**Tigers Polymer Corporation shall not be liable for any accidents caused by fall-off etc. of the fixture in the case of fixtures fitted by any party other than us. Thorough care should be observed when fitting at work sites.**

R-Power Band Tightening



Fitting at work site is possible by cutting long lengths.

Inner Coupler Expansion type



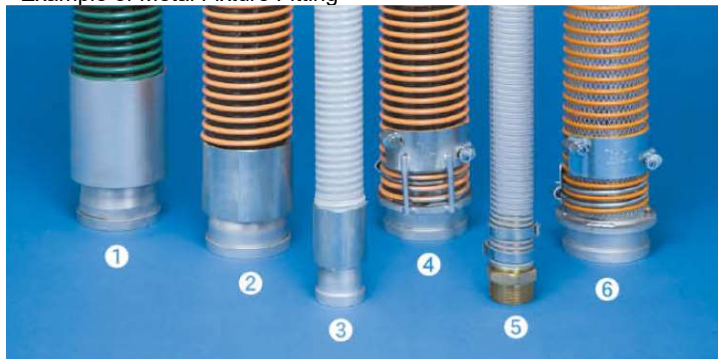
Outer Socket Caulking type



Free of concern of fall-off of fixture by mechanical caulking of coupler and socket. Also, the outer surface of the fixture is free of projections making handling safe and easy.

Example of Metal Fixture Fitting

- (1) Coupler with S shape collar for inner coupler expansion + spring socket
- (2) Coupler with S shape collar for outer socket caulking + socket
- (3) Coupler with S shape collar for inner coupler expansion + socket
- (5) M-1 metal fixture + Punch band 2 pieces tightening
- (6) Coupler with S shape collar + R-power band 2 pieces tightening



## Standard Combination Table of Fixture and Clamp

| Fixture and Clamp<br>(Tightening Method)           | WR-S | WR | FC<br>FC20 | WSU | WS | O/R WS | F-3 | E<br>A.R.E | O/R F<br>SF | WT | Antistatic<br>W | WA | A/R W | Applicable Hose Size                                                                             |
|----------------------------------------------------|------|----|------------|-----|----|--------|-----|------------|-------------|----|-----------------|----|-------|--------------------------------------------------------------------------------------------------|
| Inner Coupler<br>Expansion<br>(With Spring Socket) | ◎    | ◎  |            |     | ◎  |        |     |            |             |    |                 |    |       | WR-S, WR: φ100 or more<br>(*N/A WRφ125)<br>WS: φ250 or more<br>(*N/A φ350)                       |
| Inner Coupler<br>Expansion                         | ◎    | ◎  | ◎          |     |    |        |     |            |             |    |                 |    |       | φ75 or less                                                                                      |
| Outer Socket Caulking                              | ◎    | ◎  | ◎          | ◎   | ◎  | ◎      | ◎   | ◎          | ◎           | ◎  | ◎               | ◎  | ◎     | φ19~φ200(Except φ90)<br>E, A/R E:<br>φ100 or less(Except φ90)                                    |
| R-Power Band                                       |      | ○  |            | ○   | ○  | ○      |     |            |             | ◎  |                 | ◎  | ◎     | WT Right handed, WA, A/R W:<br>φ90 or more<br>WS, O/R WS: φ75 or more                            |
| L-Power Band                                       |      |    |            |     |    |        |     |            |             | ◎  | ◎               |    |       | WT Left-handed: φ115<br>Antistatic W: φ90 or more                                                |
| SY Band                                            |      |    |            |     | ○  | ○      |     |            |             | ◎  |                 | ◎  | ◎     | WS, O/R WS: φ65 or less<br>WT Right-handed, WA, A/R W:<br>φ75 or less                            |
| LS Band                                            |      |    |            |     |    |        |     |            |             | ◎  | ◎               |    |       | WT Left-handed: φ48.6, φ60<br>Antistatic W: φ75 or less                                          |
| ABA Band                                           |      |    |            |     | ○  | ○      | ◎   | ◎          | ◎           | ○  | ○               | ○  | ○     | F-3, E, A/R E, SF, O/R F, WT,<br>Antistatic W, A/R W: φ65 or less<br>WS, O/R WS, WA: φ50 or less |
| Breeze<br>High Torque Band                         |      |    |            |     |    |        | ◎   | ◎          | ◎           |    |                 |    |       | φ75~φ150<br>(Except φ90)                                                                         |
| Punch Band<br>Expamet Band                         |      |    |            |     | ○  | ○      | ○   | ○          | ○           | ○  | ○               | ○  | ○     | φ48.6~φ200<br>WS, O/R WS:<br>φ50~φ100                                                            |

◎ : Usable with working pressure for each applicable hose

○ : Usable with 70 percent or less of working pressure for each applicable hose

\*O/R : Oil Resistant.

\*A/R : Abrasion Resistant.

Note) This table specifies the combinations in case of using our standard couplers with S shape collar or joint sleeves with JIS flange.

In case that the other commercially available metal fixtures are used, please consult us in advance because there might be a case that a hose can not be used with its working pressure or the metal fixture can not be fitted to a hose.

For tightening the R-power band of WR hose, please refer to the allowable pressure for each metal fitting mounting method on page 14.

For duct hoses, it is not possible to fit fixtures with inner coupler expansion or outer socked caulking.

Couplers with  
G Shape Collar  
for Victaulic



Couplers with  
S Shape Collar  
for Victaulic



Joint Sleeves with Flange



Threaded Hose Nipples  
(M-1 Metal Fixture)



Quick-Acting  
Couplers with Locking Lever /



Quick-Acting  
Couplers / Adapters  
(633CT/633ET)



Spiral Wire Double Bolt Clamps  
(R-Power Band)  
For right-handed Hose



Spiral Wire Double Bolt  
Clamps (L-Power Band)  
For left-handed hose



Metal Plate Clamps  
(Expamet Band)



Metal Plate Clamps  
(Punch Band)



Metal Plate Bolt Clamps  
(ABA Band)



Spiral Wire Bolt Clamps  
(LS Band)



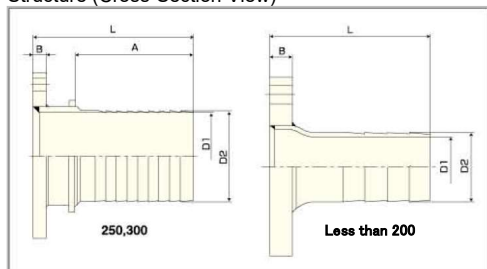
Wire Bolt Clamps  
(Wire Band)



# Metal Fixture for Hose Fitting (Dimension Table)

## Joint Sleeves with JIS Flange

Structure (Cross-Section View)

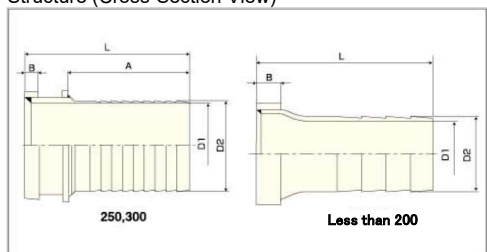


Sizes

| Nominal Dia.<br>(Φ) | A<br>(mm) | B                   |                      | D1<br>(mm) | D2<br>(mm) | L<br>(mm) |
|---------------------|-----------|---------------------|----------------------|------------|------------|-----------|
|                     |           | 5kgf Flange<br>(mm) | 10kgf Flange<br>(mm) |            |            |           |
| 25                  | —         | 10                  | 14                   | 21         | 27         | 90        |
| 38                  | —         | 12                  | 16                   | 32         | 37.6       | 130       |
| 50                  | —         | 14                  | 16                   | 44         | 50.3       | 152       |
| 65                  | —         | 14                  | 18                   | 56.5       | 63         | 155       |
| 75                  | —         | 14                  | 18                   | 68         | 75.8       | 160       |
| 100                 | —         | 16                  | 18                   | 93         | 101.0      | 175       |
| 125                 | —         | 16                  | 20                   | 118        | 126.5      | 205       |
| 150                 | —         | 18                  | 22                   | 143        | 152.0      | 230       |
| 200                 | —         | 20                  | 22                   | 189        | 203.0      | 210       |
| 250                 | 237       | 22                  | 24                   | 250        | 255        | 323       |
| 300                 | 280       | 22                  | 24                   | 298        | 306        | 366       |

## Couplers with S shape collar for Victaulic Couplings

Structure (Cross-Section View)



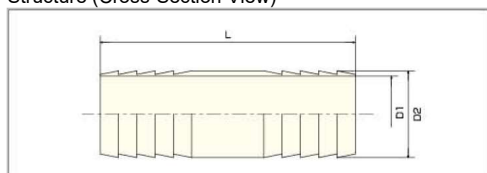
Sizes

| Nominal Dia.<br>(Φ) | A<br>(mm) | B<br>(mm) | D1<br>(mm) | D2<br>(mm) | L<br>(mm) |
|---------------------|-----------|-----------|------------|------------|-----------|
| 25                  | —         | 15        | 21         | 27         | 90        |
| 38                  | —         | 15        | 32         | 37.6       | 130       |
| 50                  | —         | 15        | 44         | 50.3       | 152       |
| 65                  | —         | 15        | 56.5       | 63         | 155       |
| 75                  | —         | 15        | 68         | 75.8       | 160       |
| 100                 | —         | 16        | 93         | 101        | 175       |
| 125                 | —         | 16        | 118        | 126.5      | 205       |
| 150                 | —         | 16        | 143        | 152        | 230       |
| 200                 | —         | 19        | 189        | 203.0      | 210       |
| 250                 | 237       | 19        | 250        | 255.0      | 323       |
| 300                 | 280       | 19        | 298        | 306.0      | 366       |

## Hose Nipples HN Type

【Material : Iron】

Structure (Cross-Section View)



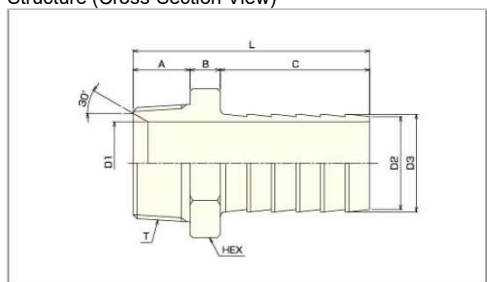
Sizes

| Nominal Dia.<br>(Φ) | D1<br>(mm) | D2<br>(mm) | L<br>(mm) |
|---------------------|------------|------------|-----------|
| 50                  | 48.0       | 51.0       | 120       |
| 65                  | 60.0       | 63.5       | 140       |
| 75                  | 74.5       | 77.0       | 181       |
| 100                 | 97.0       | 101.0      | 221       |
| 125                 | 121.0      | 127.0      | 235       |
| 150                 | 146.0      | 152.0      | 251       |
| 200                 | 197.0      | 203.0      | 315       |

## Threaded Hose Nipples

(M-1 Metal Fixture)

Structure (Cross-Section View)

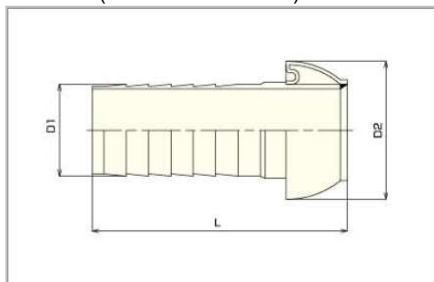


Sizes

| Nominal Dia.<br>(Φ) | T<br>(mm) | A<br>(mm) | B<br>(mm) | C<br>(mm) | E<br>(mm) | D1<br>(mm) | D2<br>(mm) | D3<br>(mm) | L<br>(mm) |
|---------------------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|-----------|
| 6                   | R1/4      | 13        | 8         | 36        | 8.5       | 4          | 6.0        | 7.5        | 57        |
| 9                   | R3/8      | 15        | 9         | 39        | 9.0       | 6          | 9.2        | 10.5       | 63        |
| 12                  | R1/2      | 18        | 10        | 44        | 10.0      | 9          | 12.5       | 14.0       | 72        |
| 19                  | R3/4      | 20        | 12        | 53        | 12.0      | 16         | 19.0       | 20.5       | 85        |
| 25                  | R1        | 22        | 12        | 58        | 13.0      | 21         | 25.0       | 27.0       | 92        |
| 32                  | R1-1/4    | 25        | 15        | 65        | 14.5      | 27         | 32.0       | 34.0       | 105       |
| 38                  | R1-1/2    | 26        | 15        | 76        | 14.0      | 31         | 38.0       | 40.3       | 117       |
| 50                  | R2        | 30        | 16        | 79        | 14.5      | 44         | 49.5       | 52.0       | 125       |
| 65                  | R2-1/2    | 33        | 18        | 99        | 15.0      | 56         | 62.5       | 65.0       | 150       |
| 75                  | R3        | 38        | 18        | 114       | 17.0      | 69         | 74.5       | 77.5       | 170       |
| 100                 | R4        | 45        | 22        | 153       | 21.5      | 88         | 97.0       | 102.0      | 220       |

## Quick-Acting Couplers with Locking Lever / Adapters

Structure (Cross-Section View)



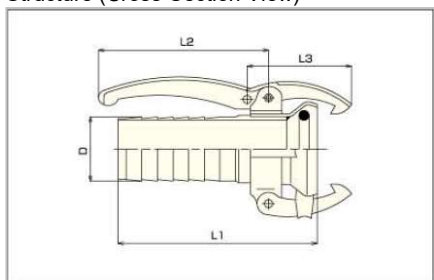
VN Hose Connect Type Sleeve  
(Male)

Sizes

| Nominal Dia.<br>(Φ) | D1<br>(mm) | L<br>(mm) | D2<br>(mm) | Working<br>Pressure<br>(MPa or less) |
|---------------------|------------|-----------|------------|--------------------------------------|
| VN50 × 38           | 38.1       | 155       | 75         | 1.17                                 |
| 50 × 50             | 52         | 155       | 75         | 1.17                                 |
| 70 × 65             | 63.5       | 165       | 100        | 1.17                                 |
| 89 × 75             | 76.3       | 185       | 126        | 1.17                                 |
| 108 × 100           | 101        | 206       | 157        | 0.98                                 |
| 133 × 125           | 126.5      | 227       | 177        | 0.78                                 |
| 159 × 150           | 152        | 255       | 210        | 0.78                                 |

\*Check the allowable pressure of the hose and metal fittings before use.

Structure (Cross-Section View)



MN Hose Connect Type Sleeve  
(Female)

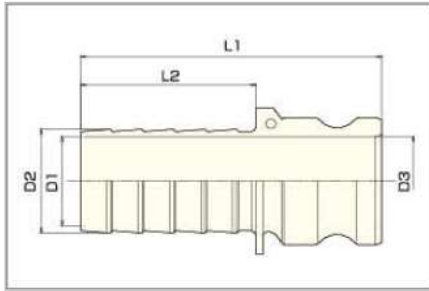
Sizes

| Nominal Dia.<br>(Φ) | D<br>(mm) | L1<br>(mm) | L2<br>(mm) | L3<br>(mm) | Working<br>Pressure<br>(MPa or less) |
|---------------------|-----------|------------|------------|------------|--------------------------------------|
| MN50 × 38           | 38.1      | 176        | 130        | 90         | 1.17                                 |
| 50 × 50             | 52        | 179        | 130        | 90         | 1.17                                 |
| 70 × 65             | 63.5      | 192        | 150        | 110        | 1.17                                 |
| 89 × 75             | 76.3      | 215        | 175        | 126        | 1.17                                 |
| 108 × 100           | 101       | 240        | 212        | 143        | 0.98                                 |
| 133 × 125           | 126.5     | 264        | 212        | 143        | 0.78                                 |
| 159 × 150           | 152       | 292        | 212        | 143        | 0.78                                 |

\*Check the allowable pressure of the hose and metal fittings before use.

## Camlock (K633ET)

Structure (Cross-Section View)



Sizes【Aluminium】

| Nominal Dia.<br>(Φ) | D1<br>(mm) | D2<br>(mm) | D3<br>(mm) | L1<br>(mm) | L2<br>(mm) | Working<br>Pressure<br>(MPa or less) |
|---------------------|------------|------------|------------|------------|------------|--------------------------------------|
| 38                  | 31         | 38         | 34         | 126        | 72         | 1.80                                 |
| 50                  | 44         | 51         | 40         | 142        | 83         | 1.80                                 |
| 65                  | 55         | 64         | 55         | 154        | 90         | 1.10                                 |
| 75                  | 69         | 77         | 64         | 167        | 104        | 0.90                                 |
| 100                 | 92         | 102        | 87         | 182        | 113        | 0.70                                 |
| 125                 | 117        | 127        | 115        | 206        | 127        | 0.50                                 |
| 150                 | 142        | 152        | 149        | 221        | 143        | 0.50                                 |

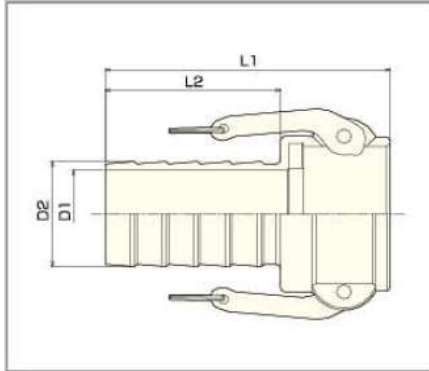
\*Check the allowable pressure of the hose and metal fittings before use.

Sizes【Stainless】

| Nominal Dia.<br>(Φ) | D1<br>(mm) | D2<br>(mm) | D3<br>(mm) | L1<br>(mm) | L2<br>(mm) | Working<br>Pressure<br>(MPa or less) |
|---------------------|------------|------------|------------|------------|------------|--------------------------------------|
| 25                  | 20         | 25         | 22         | 126        | 80         | 1.80                                 |
| 32                  | 26         | 32         | 27         | 137        | 85         | 1.80                                 |
| 38                  | 31         | 38         | 35         | 159        | 87         | 1.60                                 |
| 50                  | 43         | 51         | 43         | 174        | 98         | 1.40                                 |
| 65                  | 55         | 64         | 55         | 188        | 105        | 1.10                                 |
| 75                  | 67         | 77         | 71         | 203        | 120        | 0.50                                 |
| 100                 | 92         | 102        | 94         | 219        | 128        | 0.50                                 |

## Camlock (K633CT)

Structure (Cross-Section View)



Sizes【Aluminium】

| Nominal Dia.<br>(Φ) | D1<br>(mm) | D2<br>(mm) | L1<br>(mm) | L2<br>(mm) | Working<br>Pressure<br>(MPa or less) |
|---------------------|------------|------------|------------|------------|--------------------------------------|
| 38                  | 31         | 38         | 118        | 72         | 1.80                                 |
| 50                  | 43         | 51         | 135        | 83         | 1.80                                 |
| 65                  | 55         | 64         | 146        | 90         | 1.10                                 |
| 75                  | 68         | 77         | 163        | 104        | 0.90                                 |
| 100                 | 90         | 102        | 173        | 113        | 0.70                                 |
| 125                 | 117        | 127        | 189        | 127        | 0.50                                 |
| 150                 | 142        | 152        | 211        | 143        | 0.50                                 |

\*Check the allowable pressure of the hose and metal fittings before use.

Sizes【Stainless】

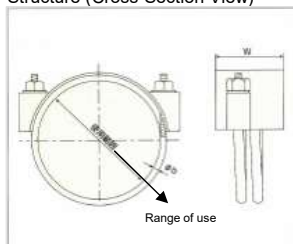
| Nominal Dia.<br>(Φ) | D1<br>(mm) | D2<br>(mm) | L1<br>(mm) | L2<br>(mm) | Working<br>Pressure<br>(MPa or less) |
|---------------------|------------|------------|------------|------------|--------------------------------------|
| 25                  | 20         | 25         | 121        | 80         | 1.80                                 |
| 32                  | 26         | 32         | 132        | 85         | 1.80                                 |
| 38                  | 31         | 38         | 152        | 87         | 1.60                                 |
| 50                  | 43         | 51         | 167        | 98         | 1.40                                 |
| 65                  | 55         | 64         | 180        | 105        | 1.10                                 |
| 75                  | 67         | 77         | 199        | 120        | 0.50                                 |
| 100                 | 92         | 102        | 210        | 128        | 0.50                                 |

## Spiral Wire Double Bolt Clamps

### R-Power Band

(for right-handed hose)

Structure (Cross-Section View)



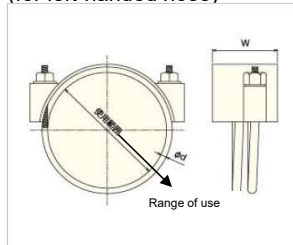
#### Sizes

| Item No. | Range of Use (mm) | W (mm) | φd (mm) | Applicable Hose       | Applicable Hose Size (φ) |
|----------|-------------------|--------|---------|-----------------------|--------------------------|
| RP-38    | 50-40             | 50     | 5       | WR                    | 38                       |
| RP-50M   | 60-50             | 50     | 5       | WR                    | 50                       |
| RP-65M   | 73-58             | 50     | 5       | WA, WS, WR            | 65                       |
| RP-75M   | 87-72             | 60     | 7       | WT, WA, WS, WR, A/R W | 75                       |
| RP-90    | 100-85            | 60     | 7       | WT, WA, A/R W         | 90                       |
| RP-100A  | 118-98            | 60     | 7       | WT, WA, WS, WR, A/R W | 100                      |
| RP-115   | 132-112           | 60     | 9       |                       | 115                      |
| RP-125M  | 143-123           | 70     | 9       | WT, WA, WS, WR, A/R W | 125                      |
| RP-150A  | 173-148           | 70     | 9       | WT, WA, WS, WR, A/R W | 150                      |
| RP-200   | 229-199           | 80     | 9       | WT, WA, WS, WR        | 200                      |
| RP-250   | 285-245           | 90     | 9       | WS, WR                | 250                      |
| RP-300   | 340-300           | 90     | 9       | WS, WR                | 300                      |

\* A/R : Abrasion Resistant.

### L-Power Band

(for left-handed hose)

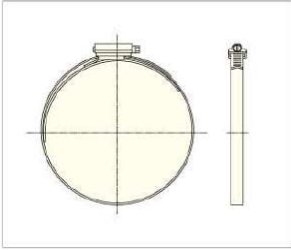


#### Sizes

| Item No. | Range of Use (mm) | W (mm) | φd (mm) | Applicable Hose | Applicable Hose Size (φ) |
|----------|-------------------|--------|---------|-----------------|--------------------------|
| LP-38    | 50-40             | 50     | 5       |                 | 38                       |
| LP-50M   | 60-50             | 50     | 5       |                 | 50                       |
| LP-65M   | 73-58             | 50     | 5       | Antistatic W    | 65                       |
| LP-75M   | 87-72             | 60     | 7       | Antistatic W    | 75                       |
| LP-90    | 100-85            | 60     | 7       | Antistatic W    | 90                       |
| LP-100A  | 118-98            | 60     | 7       | Antistatic W    | 100                      |
| LP-115   | 132-112           | 60     | 9       | WT              | 115                      |
| LP-125M  | 143-123           | 70     | 9       |                 | 125                      |
| LP-150A  | 173-148           | 70     | 9       |                 | 150                      |
| LP-200   | 229-199           | 80     | 9       |                 | 200                      |
| LP-250   | 285-245           | 90     | 9       |                 | 250                      |
| LP-300   | 340-300           | 90     | 9       |                 | 300                      |

## Breeze High Torque Band

Structure (Cross-Section View)



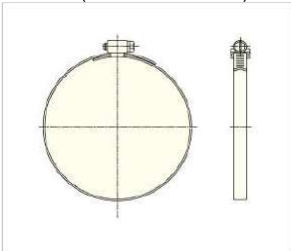
Sizes

| Item No.     | Range of Use<br>(mm) | Applicable Hose |      |
|--------------|----------------------|-----------------|------|
|              |                      | Item Name       | Size |
| HTM350LB/75  | 70~92                | F-3, E, A/R E   | 75   |
| HTM500LB/100 | 108~130              | F-3, E, A/R E   | 100  |
| HTM600LB/125 | 133~156              | F-3, E, A/R E   | 125  |
| HTM700LB/150 | 159~191              | F-3, E, A/R E   | 150  |

\* A/R : Abrasion Resistant.

## Tridon Band

Structure (Cross-Section View)



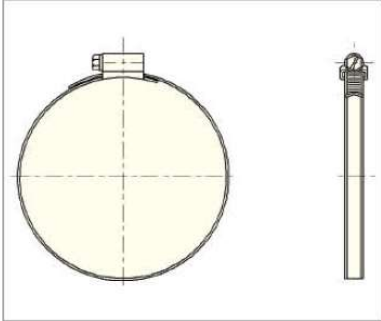
Sizes

| Item No. | Range of Use<br>(mm) | Cuff Size of<br>Applicable<br>Duct | Applicable Hose                 |      |                                    |      |
|----------|----------------------|------------------------------------|---------------------------------|------|------------------------------------|------|
|          |                      |                                    | Item Name                       | Size | Item Name                          | Size |
| 8        | 11-25                | 16                                 |                                 |      |                                    |      |
| 10       | 14-27                | 19                                 | F-3                             | 19   |                                    |      |
| 12       | 14-32                | 25                                 | F-3                             | 25   |                                    |      |
| 16       | 17-38                |                                    | SF, Oil Resistant F             | 25   |                                    |      |
| 20       | 19-44                | 32                                 | F-3, E, SF, Oil Resistant F     | 32   |                                    |      |
| 24       | 27-51                | 38                                 | F-3, E, SF, Oil Resistant F, AP | 38   |                                    |      |
| 28       | 33-57                |                                    | E                               | 45   |                                    |      |
| 32       | 40-63                | 50                                 | E                               | 48.6 | V, F-3, E, SF, Oil Resistant F, AP | 50   |
| 36       | 46-70                |                                    |                                 |      |                                    |      |
| 40       | 52-76                | 65                                 | V type                          | 65   |                                    |      |
| 44       | 59-82                |                                    |                                 |      |                                    |      |
| 48       | 65-89                | 75                                 | V type, AP type                 | 75   |                                    |      |
| 56       | 78-101               | 90                                 | V type                          | 90   |                                    |      |
| 60       | 84-108               |                                    |                                 |      |                                    |      |
| 64       | 64-114               | 100                                | V type, AP type                 | 100  |                                    |      |
| 72       | 76-127               |                                    |                                 |      |                                    |      |
| 84       | 95-146               | 125                                | V type, AP type                 | 125  |                                    |      |
| 88       | 102-152              |                                    |                                 |      |                                    |      |
| 96       | 114-165              | 150                                | V type                          | 150  |                                    |      |
| 104      | 127-178              |                                    | AP type                         | 150  |                                    |      |
| 128      | 155-216              |                                    | V type                          | 175  | V type                             | 200  |
| 152      | 204-253              | 200                                | AP type                         | 200  |                                    |      |
| 188      | 260-311              | 300                                | V type                          | 275  | V type                             | 300  |

## ABA Band

### ABA Band

#### Structure (Cross-Section View)



The applicable hose and cuff size are shown as a guide when inserting a nipple with an outer diameter that is approximately equal to the inner diameter of the hose and mouth. When using a nipple with a large outer diameter, it may not be possible to use it, so please contact us.

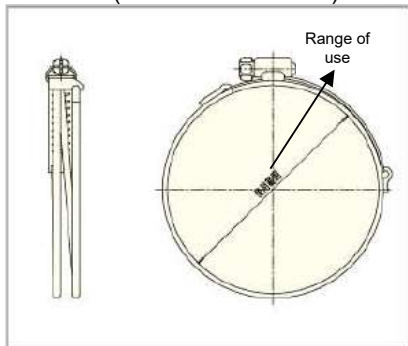
#### Sizes

| Item No. | Range of Use (mm) | Cuff Size of Applicable Duct | Applicable Hose        |      |                                    |      |
|----------|-------------------|------------------------------|------------------------|------|------------------------------------|------|
|          |                   |                              | Item Name              | Size | Item Name                          | Size |
| 8-14     | 8-15              |                              |                        |      |                                    |      |
| 11-17    | 10-17             |                              |                        |      |                                    |      |
| 13-20    | 12-22             | 16                           |                        |      |                                    |      |
| 15-24    | 15-25             | 19                           |                        |      |                                    |      |
| 19-28    | 19-29             |                              | F-3                    | 19   |                                    |      |
| 22-32    | 22-33             | 25                           | F-3                    | 25   |                                    |      |
| 26-38    | 26-39             | 32                           | SF, Oil Resistant F    | 25   | F-3                                | 32   |
| 32-44    | 32-45             | 38                           | E, SF, Oil Resistant F | 32   | F-3, AP                            | 38   |
| 38-50    | 38-51             |                              | E, SF, Oil Resistant F | 38   |                                    |      |
| 44-56    | 44-57             | 50                           | E                      | 45   |                                    |      |
| 50-65    | 50-66             |                              | E                      | 48.6 | V, F-3, E, SF, Oil Resistant F, AP | 50   |
| 58-75    | 58-76             | 65                           | V                      | 65   |                                    |      |
| 68-85    | 68-86             | 75                           | V, AP                  | 75   |                                    |      |
| 77-95    | 77-96             | 90                           | V                      | 90   |                                    |      |
| 87-112   | 87-113            | 100                          | V, AP                  | 100  |                                    |      |
| 104-138  | 106-139           | 125                          | V, AP                  | 125  |                                    |      |
| 130-165  | 132-166           | 150                          | V, AP                  | 150  |                                    |      |
| 150-180  | 150-181           |                              | V                      | 175  |                                    |      |
| 175-205  | 175-206           |                              | V                      | 200  |                                    |      |
| 200-231  | 200-232           | 200                          | AP                     | 200  |                                    |      |
| 226-256  | 226-257           |                              | V                      | 250  |                                    |      |
| 251-282  | 251-283           | 250                          | V                      | 275  |                                    |      |
| 277-307  | 277-308           | 300                          | V                      | 300  |                                    |      |

## Spiral Wire Band (for hose without Cuff)

### LS Band (for left-handed hose)

Structure (Cross-Section View)

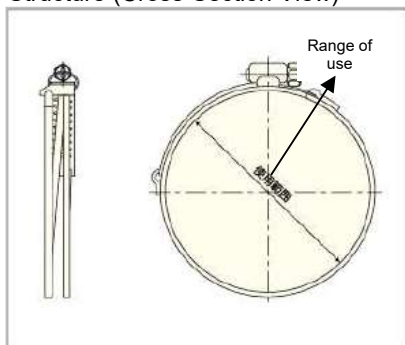


### Sizes

| Item No. | Range of Use (mm) | Applicable Hose                    |      |                                    |      |                                    |      |
|----------|-------------------|------------------------------------|------|------------------------------------|------|------------------------------------|------|
|          |                   | Item Name                          | Size | Item Name                          | Size | Item Name                          | Size |
| LS-33    | 33-26             | GL, N                              | 25   | Antistatic W                       | 25   |                                    |      |
| LS-37    | 37-29             | GL, N                              | 32   |                                    |      |                                    |      |
| LS-42    | 42-34             | Antistatic W                       | 32   | GL, N, GL-2, Oil Resistant F, GL-E | 38   |                                    |      |
| LS-46    | 46-38             | Antistatic W                       | 38   | GL                                 | 45   |                                    |      |
| LS-57    | 57-49             | Antistatic W                       | 45   | WT, Antistatic W                   | 48.6 | GL, N, GL-2, Oil Resistant F, GL-E | 50   |
| LS-62    | 62-54             | Antistatic W                       | 50   |                                    |      |                                    |      |
| LS-71    | 71-63             | Antistatic W                       | 60   | WT                                 | 60.5 | GL, N, GL-2, Oil Resistant F, GL-E | 65   |
| LS-73    | 73-65             | Antistatic W                       | 65   |                                    |      |                                    |      |
| LS-81    | 81-73             | GL, N, GL-2, Oil Resistant F, GL-E | 75   |                                    |      |                                    |      |
| LS-88    | 88-68             | Antistatic W                       | 75   |                                    |      |                                    |      |
| LS-101   | 101-81            | Antistatic W                       | 90   | GL, N                              | 90   |                                    |      |
| LS-110   | 110-90            | GL, N, GL-2, Oil Resistant F, GL-E | 100  |                                    |      |                                    |      |
| LS-117   | 117-97            | Antistatic W                       | 100  |                                    |      |                                    |      |
| LS-121   | 121-101           | GL                                 | 115  |                                    |      |                                    |      |
| LS-131   | 131-111           | WT                                 | 115  | GL, N, GL-2, Oil Resistant F, GL-E | 125  |                                    |      |
| LS-157   | 157-137           | GL, N, GL-2, Oil Resistant F, GL-E | 150  |                                    |      |                                    |      |
| LS-182   | 182-162           | GL, N                              | 165  | GL, N                              | 175  |                                    |      |
| LS-210   | 210-190           | GL, N, Oil Resistant F             | 200  |                                    |      |                                    |      |
| LS-240   | 240-220           |                                    |      |                                    |      |                                    |      |
| LS-266   | 266-246           | GL, N                              | 250  |                                    |      |                                    |      |
| LS-290   | 290-270           |                                    |      |                                    |      |                                    |      |
| LS-318   | 320-300           | GL, N                              | 300  |                                    |      |                                    |      |

## SY Band (for right-handed hose)

### Structure (Cross-Section View)



### Sizes

| Item No. | Range of Use<br>(mm) | Applicable Hose                                 |      |
|----------|----------------------|-------------------------------------------------|------|
|          |                      | Item Name                                       | Size |
| SY-33    | 33-26                | WT, WS                                          | 25   |
| SY-37    | 37-29                | WT                                              | 32   |
| SY-42    | 42-34                | WS, Abrasion Resistant GL(Φ38)                  | 32   |
| SY-46    | 46-38                | WS, WA, WS, Abrasion Resistant W                | 38   |
| SY-57    | 57-49                | WT, Abrasion Resistant W, Abrasion Resistant GL | 50   |
| SY-62    | 62-54                | WS, WA                                          | 50   |
| SY-71    | 71-63                | Abrasion Resistant GL                           | 65   |
| SY-73    | 73-65                | WT, WA, WS, Abrasion Resistant W                | 65   |
| SY-81    | 81-73                | Abrasion Resistant GL                           | 75   |
| SY-88    | 88-68                | WT, WA, WS, Abrasion Resistant W                | 75   |
| SY-101   | 101-81               | WT, Abrasion Resistant W, Abrasion Resistant GL | 90   |
| SY-110   | 110-90               | Abrasion Resistant GL                           | 100  |
| SY-117   | 117-97               | WT, WA, WS, Abrasion Resistant W                | 100  |
| SY-121   | 121-101              |                                                 |      |
| SY-131   | 131-111              | Abrasion Resistant GL                           | 125  |
| SY-157   | 157-137              | Abrasion Resistant GL                           | 150  |
| SY-182   | 182-162              |                                                 |      |
| SY-210   | 210-190              |                                                 |      |
| SY-220   | 220-200              | Abrasion Resistant GL                           | 200  |
| SY-240   | 240-220              |                                                 |      |
| SY-266   | 266-246              |                                                 |      |
| SY-290   | 290-270              |                                                 |      |
| SY-318   | 320-300              |                                                 |      |

# Chemical Resistance Guide

This table is based on immersion test <our test data> in chemicals for each item (by using pressed sheet), documents, and other company data (rubber hose anufacturers'). Therefore, this is based on the data under static conditions and a phenomenon (material change) might be different from that under the circumstances of actual use. Please consult us after confirming detailed use conditions. When using a hose, regardless of whether it has superior or inferior chemical resistance, conduct maintenance and inspection based on "Hose handling" on page 4.

|   |                                                                                                                                                                       |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | TIFLEX™ Hose / F-3, WT, Antistatic W, E, SF, Hinet Hose<br>TIFLEX™ Hose / GL, N, GL-2, GL-ST, GL-E<br>TIFLEX™ Hose / WS, FC, FC20, WR(Φ75 or less), WR-S(Φ75 or less) |
| B | TIFLEX™ Hose / WA, TIFLEX™ Hose / Abrasion Resistant GL                                                                                                               |
| C | TIFLEX™ Hose / WR(Φ100 or more), WR-S(Φ100 or more)                                                                                                                   |
| D | TIFLEX™ Hose / Abrasion Resistant E                                                                                                                                   |
| E | TIFLEX™ Hose / Abrasion Resistant E, TIFLEX™ Hose / WSU                                                                                                               |

Resistant properties against each fluid (chemical) are as follows:

- = Hardly affected  
 △ = Considerably affected (might be used according to conditions)  
 × = Unsuitable

Unless otherwise noted, concentration of water solution is saturate and it is at normal temperature.

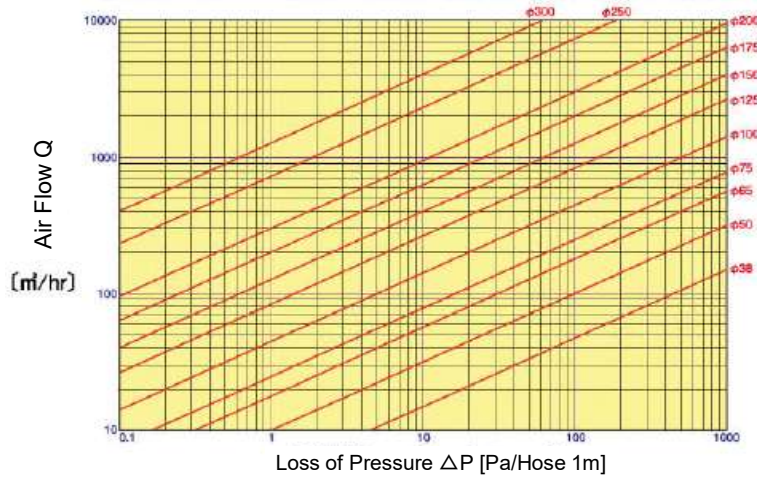
| Large Classification | Small Classification | Oil, Solvent, Chemicals {Concentration Weight %} | A | B | C | D | E |
|----------------------|----------------------|--------------------------------------------------|---|---|---|---|---|
| Acid                 |                      | Sulfurous Acid                                   | ○ | ○ | ○ | × | ○ |
|                      |                      | Hydrochloric Acid (10%)                          | ○ | ○ | △ | ○ | ○ |
|                      |                      | Hydrochloric Acid (20%)                          | ○ | ○ | △ | △ | ○ |
|                      |                      | Hydrochloric Acid (Conc.)                        | × | △ | × | △ | ○ |
|                      |                      | Hydrogen Peroxide (3%)                           | ○ | △ | × | ○ | ○ |
|                      |                      | Hydrogen Peroxide (30%)                          | △ | × | × | △ | ○ |
|                      |                      | Hydrogen Peroxide (80% or more)                  | × | × | × | × | × |
|                      |                      | Chromic Acid Plating Solution (25%)              | ○ | × | × | × | ○ |
|                      |                      | Acetic Acid (10%)                                | ○ | ○ | ○ | × | ○ |
|                      |                      | Oxalic Acid                                      | ○ | ○ | ○ | ○ | ○ |
|                      |                      | Nitric Acid (5%)                                 | ○ | △ | × | × | ○ |
|                      |                      | Nitric Acid (50%)                                | △ | △ | × | × | × |
|                      |                      | Nitric Acid (70%)                                | × | × | × | × | × |
|                      |                      | Nitric Acid (95%)                                | × | × | × | × | × |
|                      |                      | Carbonic Acid                                    | ○ | ○ | × | △ | ○ |
|                      |                      | Sulfuric Acid (10%)                              | ○ | △ | × | ○ | ○ |
|                      |                      | Phosphoric Acid (10%)                            | ○ | ○ | × | △ | ○ |
| Alkali               |                      | Ammonia Aqueous (Ammonium Hydroxide)             | △ | ○ | × | ○ | ○ |
|                      |                      | Ammonia (Gas)                                    | × | ○ | ○ | ○ | △ |
|                      |                      | Ammonia (Liquid)                                 | × | ○ | ○ | ○ | △ |
|                      |                      | Calcium Hypochlorite (Conc)                      | ○ | ○ | × | × | ○ |
|                      |                      | Calcium Hypochlorite (15% in chlorine)           | ○ | ○ | × | ○ | ○ |
|                      |                      | Aluminum Hydroxide                               | ○ | ○ | ○ | ○ | ○ |
|                      |                      | Potassium Hydroxide (10%)                        | ○ | ○ | △ | ○ | ○ |
|                      |                      | Potassium Hydroxide (Conc)                       | × | ○ | △ | ○ | ○ |
|                      |                      | Sodium Hydroxide (10%)                           | ○ | ○ | ○ | ○ | ○ |
|                      |                      | Sodium Hydroxide (Conc)                          | × | ○ | ○ | ○ | ○ |
|                      |                      | Barium Hydroxide                                 | ○ | ○ | ○ | ○ | ○ |
|                      |                      | Magnesium Hydroxide                              | ○ | ○ | △ | ○ | ○ |

| Large Classification      | Small Classification | Oil, Solvent, Chemicals {Concentration Weight %} | A | B | C | D | E |
|---------------------------|----------------------|--------------------------------------------------|---|---|---|---|---|
| Other Inorganic Chemicals |                      | Carbon Monoxide                                  | ○ | ○ | △ | ○ | ○ |
|                           |                      | Zinc Chloride                                    | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Aluminum Chloride                                | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Ammonium Chloride                                | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Potassium Chloride                               | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Calcium Chloride (Conc.)                         | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Ferrous Chloride                                 | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Copper Chloride                                  | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Sodium Chloride                                  | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Barium Chloride                                  | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Magnesium Chloride                               | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Chlorine (Gas)                                   | △ | × | × | × | △ |
|                           |                      | Ozone                                            | △ | ○ | × | ○ | ○ |
|                           |                      | Potassium Permanganate                           | ○ | ○ | △ | × | ○ |
|                           |                      | Citric Acid                                      | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Aluminum Acetate                                 | ○ | ○ | △ | △ | △ |
|                           |                      | Ammonium Acetate (Conc.)                         | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Potassium Cyanide                                | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Potassium Bromide                                | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Potassium Dichromate                             | ○ | ○ | × | ○ | ○ |
|                           |                      | Bromine                                          | × | × | × | △ | × |
|                           |                      | Ammonium Bicarbonate                             | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Sodium Bicarbonate                               | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Ammonium Nitrate                                 | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Copper Nitrate                                   | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Hydrogen                                         | ○ | ○ | △ | ○ | ○ |
|                           |                      | Carbon Dioxide                                   | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Calcium Carbonate                                | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Magnesium Carbonate                              | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Carbon Dioxide                                   | × | × | × | × | △ |
|                           |                      | Potassium Fluoride                               | × | ○ | ○ | ○ | ○ |
|                           |                      | Fluorine                                         | × | × | × | △ | × |
|                           |                      | Iodine                                           | × | × | × | △ | × |
|                           |                      | Hydrogen Sulfide                                 | × | ○ | × | △ | ○ |
|                           |                      | Aluminum Sulfate                                 | ○ | ○ | △ | ○ | ○ |
|                           |                      | Ferric Sulfate                                   | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Copper Sulfate                                   | ○ | ○ | △ | ○ | ○ |
|                           |                      | Magnesium Sulfate                                | ○ | ○ | △ | ○ | ○ |
|                           |                      | Potassium Phosphate                              | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Emulsions                                        | ○ | ○ | ○ | ○ | ○ |
|                           |                      | Photographic Developers                          | ○ | △ | △ | ○ | ○ |
|                           |                      | Salt Water                                       | ○ | ○ | ○ | ○ | ○ |

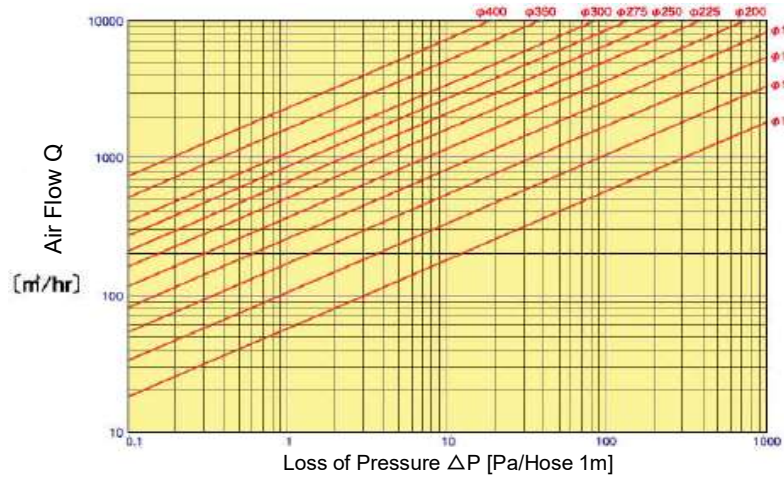
| Large Classification | Small Classification       | Oil, Solvent, Chemicals<br>{Concentration Weight %} | A | B | C | D | E |
|----------------------|----------------------------|-----------------------------------------------------|---|---|---|---|---|
| Organic Chemicals    | Ketone,<br>Ether, etc.     | Acetone                                             | x | ○ | △ | x | x |
|                      |                            | Diethyl Ether                                       | x | x | x | x | x |
|                      |                            | Methyl Ethyl Ketone                                 | x | ○ | x | x | x |
|                      | Chlorinated Solvent        | Ethylene Chloride                                   | x | x | x | x | x |
|                      |                            | Methylene Chloride                                  | x | x | x | x | x |
|                      |                            | Chloroform                                          | x | x | x | x | x |
|                      |                            | Carbon Tetrachloride                                | x | x | x | x | x |
|                      |                            | Dichloroethylene                                    | x | x | x | x | x |
|                      |                            | Dichlorobenzene                                     | x | x | x | x | x |
|                      |                            | Perchloroethylene                                   | x | x | x | x | x |
|                      |                            | Monochlorobenzene                                   | x | x | x | x | x |
|                      | Other<br>Organic Chemicals | Aniline                                             | x | △ | x | x | △ |
|                      |                            | Isopropyl Alcohol                                   | △ | ○ | △ | x | ○ |
|                      |                            | Ethyl Alcohol (6%)                                  | △ | ○ | ○ | △ | ○ |
|                      |                            | Ethyl Alcohol (100%)                                | x | ○ | △ | x | ○ |
|                      |                            | Ethylene Glycol                                     | ○ | ○ | ○ | ○ | ○ |
|                      |                            | Oleic Acid                                          | △ | △ | x | △ | ○ |
|                      |                            | Glycerin                                            | ○ | ○ | ○ | ○ | ○ |
|                      |                            | Creosote Oil                                        | x | x | x | △ | x |
|                      |                            | Ethyl Acetate                                       | x | △ | x | x | x |
|                      |                            | Stearic Acid                                        | ○ | △ | △ | △ | ○ |
|                      |                            | Cetyl Alcohol                                       | ○ | △ | △ | △ | ○ |
|                      |                            | Dextrin                                             | ○ | ○ | ○ | ○ | ○ |
|                      |                            | Tetrahydrofuran                                     | x | x | x | x | x |
|                      |                            | Toluene                                             | x | x | x | x | x |
|                      |                            | Paraffin                                            | △ | x | x | ○ | ○ |
|                      |                            | Phenol                                              | x | △ | x | △ | △ |
|                      |                            | Butyl Alcohol                                       | x | △ | ○ | x | △ |
|                      |                            | Glucose                                             | ○ | ○ | ○ | ○ | ○ |
|                      |                            | Propylene Glycol                                    | x | ○ | △ | △ | ○ |
|                      |                            | Benzyl Alcohol                                      | x | △ | x | x | △ |
|                      |                            | Benzene                                             | x | x | x | x | x |
|                      |                            | Formaldehyde (40%)                                  | △ | △ | x | x | △ |
|                      |                            | Methyl Alcohol (6%)                                 | ○ | ○ | ○ | x | ○ |
|                      |                            | Methyl Alcohol (100%)                               | x | ○ | ○ | x | ○ |
|                      |                            | Aniline Sulfate                                     | ○ | x | x | ○ | ○ |
|                      |                            | Mineral Oil                                         | x | x | x | ○ | x |
|                      |                            | Transformer Oil                                     | x | x | x | ○ | x |

# Pressure Loss Graph of Duct Hose

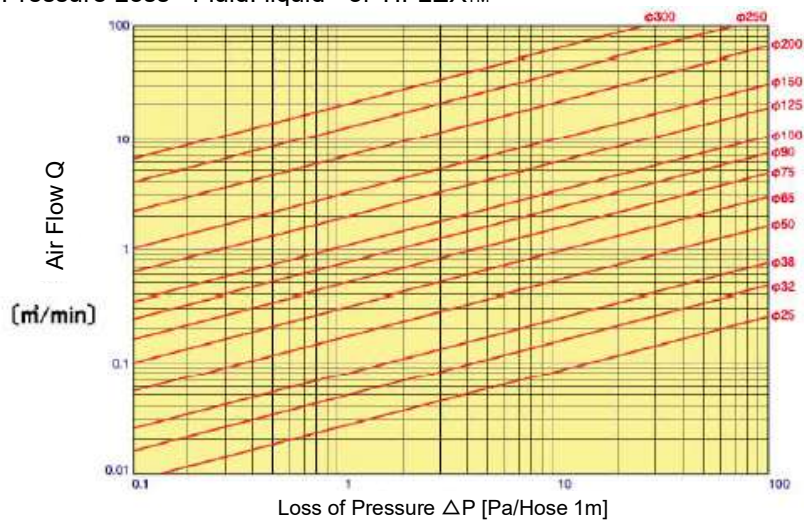
Pressure Loss <Fluid: Gas> of TIFLEX™ (GL, GL-2, GL-E, GL-ST), TIFLEX™ Hose Oil Resistant GL



Pressure Loss <Fluid: Gas> of TIFLEX™ NH-1



Pressure Loss <Fluid: liquid> of TIFLEX™



# Pressure and Stretch Rate

| Item Name                  | Diameter<br>( $\phi$ ) | Hose Stretch Rate (%)          |                                 |                                 |                                 |                                 |
|----------------------------|------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                            |                        | 0.2MPa (2kgf/cm <sup>2</sup> ) | 0.4MPa (4kgf/cm <sup>2</sup> )  | 0.6MPa (2kgf/cm <sup>2</sup> )  | 0.8MPa (8kgf/cm <sup>2</sup> )  | 1.0MPa (10kgf/cm <sup>2</sup> ) |
| TIFLEX™ Hose<br>WR type    | 38                     | 0.3                            | 0.4                             | 0.5                             | 0.7                             | 0.7                             |
|                            | 50                     | 0.4                            | 0.6                             | 0.7                             | 0.8                             | 0.8                             |
|                            | 65                     | 0.3                            | 0.4                             | 0.5                             | 0.7                             | 0.8                             |
|                            | 75                     | 0.3                            | 0.5                             | 0.6                             | 0.7                             | 0.8                             |
|                            | 100                    | 1.0                            | 1.4                             | 1.6                             | 1.9                             | 2.1                             |
|                            | 125                    | 1.2                            | 2.0                             | 2.5                             | 2.8                             | 2.9                             |
|                            | 150                    | 1.6                            | 2.5                             | 2.7                             | 3.3                             | 3.5                             |
|                            | 200                    | 2.1                            | 2.8                             | 3.2                             | 3.8                             | 4.0                             |
|                            | 250                    | 2.3                            | 3.2                             | 3.4                             | 4.2                             | 4.5                             |
|                            | 300                    | 2.8                            | 3.2                             | 3.5                             | 4.2                             | 4.5                             |
| TIFLEX™ Hose<br>WS type    | 25                     | 3.4                            | 4.3                             | 4.9                             | —                               | —                               |
|                            | 32                     | 3.7                            | 5.3                             | 7.0                             | —                               | —                               |
|                            | 38                     | 1.6                            | 3.4                             | 4.4                             | —                               | —                               |
|                            | 50                     | 2.2                            | 3.2                             | 4.8                             | —                               | —                               |
|                            | 65                     | 2.0                            | 4.0                             | 8.4                             | —                               | —                               |
|                            | 75                     | 2.0                            | 3.0                             | 6.1                             | —                               | —                               |
|                            | 100                    | 1.6                            | 4.4                             | 8.7                             | —                               | —                               |
|                            | 125                    | 1.7                            | 2.9                             | —                               | —                               | —                               |
|                            | 150                    | 2.5                            | 3.4                             | —                               | —                               | —                               |
|                            | 200                    | 2.5                            | 4.3                             | —                               | —                               | —                               |
|                            | 250                    | 2.7                            | 5.0                             | —                               | —                               | —                               |
|                            | 300                    | 3.2                            | 6.0                             | —                               | —                               | —                               |
|                            | 350                    | 3.2                            | 4.8                             | —                               | —                               | —                               |
| TIFLEX™ Hose<br>F-3 type   | 19                     | 3.0                            | 7.5                             | 10.0                            | —                               | —                               |
|                            | 25                     | 3.9                            | 8.9                             | 14.2                            | —                               | —                               |
|                            | 32                     | 4.3                            | 11.1                            | 15.1                            | —                               | —                               |
|                            | 38                     | 6.0                            | 13.6                            | —                               | —                               | —                               |
|                            | 50                     | 5.2                            | 12.6                            | —                               | —                               | —                               |
|                            | 65                     | 7.4                            | 14.3                            | —                               | —                               | —                               |
|                            | 75                     | 7.3                            | 15.7                            | —                               | —                               | —                               |
|                            | 100                    | 9.5                            | —                               | —                               | —                               | —                               |
|                            | 125                    | 11.5                           | —                               | —                               | —                               | —                               |
|                            | 150                    | 13.1                           | —                               | —                               | —                               | —                               |
|                            | 200                    | 14.1                           | —                               | —                               | —                               | —                               |
| Item Name                  | Diameter<br>( $\phi$ ) | Hose Stretch Rate (%)          |                                 |                                 |                                 |                                 |
|                            |                        | 0.5MPa (5kgf/cm <sup>2</sup> ) | 1.0MPa (10kgf/cm <sup>2</sup> ) | 1.5MPa (15kgf/cm <sup>2</sup> ) | 2.0MPa (20kgf/cm <sup>2</sup> ) |                                 |
| TIFLEX™ Hose<br>FC type    | 38                     | 0.4                            | 0.6                             | 0.8                             | —                               | —                               |
|                            | 50                     | 0.4                            | 0.7                             | 1.0                             | —                               | —                               |
| TIFLEX™ Hose<br>FC 20 type | 50                     | 0.4                            | 0.7                             | 1.0                             | 1.0                             | —                               |
|                            | 75                     | 0.4                            | 0.6                             | 1.0                             | 1.0                             | —                               |
| TIFLEX™ Hose<br>WR-S type  | 50                     | 0.5                            | 0.6                             | 1.0                             | 2.2                             | —                               |
|                            | 75                     | 1.0                            | 0.7                             | 1.2                             | 1.0                             | —                               |
|                            | 100                    | 1.7                            | 2.0                             | 2.1                             | 1.2                             | —                               |
|                            | 150                    | 2.5                            | 2.8                             | 3.0                             | 3.3                             | —                               |
|                            | 200                    | 2.6                            | 3.2                             | 3.3                             | 3.6                             | —                               |

※ Above data show a stretch rate of length direction by applying water pressure into a hose at 20°C and under straight pipe condition.

※ Above data is not the standard value, but the test ones.

# Temperature and Working Pressure

Pressure performance of the hose is significantly affected depending on the fluid and ambient temperature. The table on the right side indicates examples of working pressure at 20°C and 50°C.

| Working Pressure (MPa {kgf/cm <sup>2</sup> }) |                                    |                                   | (at $\phi$ 50)                    |
|-----------------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| Temp. (°C)                                    | TIFLEX <sup>TM</sup> Hose F-3 type | TIFLEX <sup>TM</sup> Hose WS type | TIFLEX <sup>TM</sup> Hose WR type |
| 20                                            | 0.3 [3.1]                          | 0.5 [5.1]                         | 1.0 [10.2]                        |
| 50                                            | 0.15 [1.5]                         | 0.25 [2.6]                        | 0.5 [5.1]                         |

# Standard of tightening for R-Power Band

When a hose is tightened by R-Power Band at work site, please refer to the right side table as a guide.

| Nominal Dia. ( $\phi$ ) | TIFLEX <sup>TM</sup> Hose WS type |                | TIFLEX <sup>TM</sup> Hose New WR type |                |
|-------------------------|-----------------------------------|----------------|---------------------------------------|----------------|
|                         | Torque (N, m) {kgf, cm}           | Number of band | Torque (N, m) {kgf, cm}               | Number of Hose |
| 38                      | -                                 | -              | 15 [150]                              | 1              |
| 50                      | 10 [100]                          | 2              | 15 [150]                              | 2              |
| 65                      | 10 [100]                          | 2              | 15 [150]                              | 2              |
| 75                      | 10 [100]                          | 2              | 25[250]                               | 2              |
| 100                     | 15 [150]                          | 2              | 25[250]                               | 2              |
| 125                     | 25 [250]                          | 2              | 30[300]                               | 2              |
| 150                     | 25 [250]                          | 2              | 30[300]                               | 2              |
| 200                     | 25 [250]                          | 2              | 30[300]                               | 2              |
| 250                     | 25 [250]                          | 2              | 30[300]                               | 2              |
| 300                     | 25 [250]                          | 2              | 30[300]                               | 2              |

Note:

- 1) For WS, WR, WR-S, FC, FC-20, WSU and O/R type, the way of fitting with steel rods for welding to prevent from sudden fall-off of fixture shall be our standard.  
We recommend you to order these hoses with appropriate metal
- 2) Use metal fixtures of which sleeve part has jagged surface.
- 3) Retighten accordingly because tightening force of clamps is gradually reduced by stress relaxation. However, be careful not to break hose due to applying exceeded tightening force.
- 4) In case you use a metal fixture on the market, it might not be tightened enough as written above because of the nipple's shape.

\*O/R: Oil Resistant

# Pressure Unit Conversion Table

| Pressure | Pa (Pascal)        | bar (Atmospheric Pressure) | kgf/cm <sup>2</sup>   | atm                   | mmH <sub>2</sub> O or mmAq (Water Column) | mmHg or Torr (Mercury Column) |
|----------|--------------------|----------------------------|-----------------------|-----------------------|-------------------------------------------|-------------------------------|
|          | 1                  | $1 \times 10^{-5}$         | $1.02 \times 10^{-5}$ | $9.87 \times 10^{-6}$ | $1.02 \times 10^{-1}$                     | $7.50 \times 10^{-3}$         |
|          | $1 \times 10^5$    | 1                          | 1.02                  | $9.87 \times 10^{-1}$ | $1.02 \times 10^4$                        | $7.50 \times 10^2$            |
|          | $9.81 \times 10^4$ | $9.81 \times 10^{-1}$      | 1                     | $9.68 \times 10^{-1}$ | $1 \times 10^4$                           | $7.36 \times 10^2$            |
|          | $1.01 \times 10^5$ | 1.01                       | 1.03                  | 1                     | $1.03 \times 10^4$                        | $7.60 \times 10^2$            |
|          | 9.81               | $9.81 \times 10^{-5}$      | $1 \times 10^{-4}$    | $9.68 \times 10^{-5}$ | 1                                         | $7.36 \times 10^{-2}$         |
|          | $1.33 \times 10^2$ | $1.33 \times 10^{-3}$      | $1.36 \times 10^{-3}$ | $1.32 \times 10^{-3}$ | $1.36 \times 10$                          | 1                             |

# Guide for Hose Selection

| Items          |                             | Contents                           | Check column                                                                                                                                                                                                 |
|----------------|-----------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application    | Intended Purpose            |                                    |                                                                                                                                                                                                              |
|                | Equipment Name              |                                    |                                                                                                                                                                                                              |
| Specifications | Dimensions                  | Inner Diameter                     | Actual Size (mm)                                                                                                                                                                                             |
|                |                             | Outer Diameter                     | Actual Size (mm)                                                                                                                                                                                             |
|                |                             | Length                             | Entire Length include metal fixture or of only hose                                                                                                                                                          |
|                |                             | Packing                            | Acceptance of bend remaining                                                                                                                                                                                 |
|                | Metal Fixtures Cuffs        | Necessity / Type of Metal Fixtures | With metal fixture (one or both ends), or only hose<br>With JIS ( ) kgs flange (fixed, loose), S shape collar, G shape collar, male screw, etc.<br>Please consult us about the other special metal fixtures. |
|                |                             | Fitting Method<br>Type of Clamps   | Outer socket caulking, inner coupler expansion, R-power band, etc.<br>Please consult us about the other special fitting methods.                                                                             |
|                | Material                    | Hose                               | PVC, Non-PVC, etc.                                                                                                                                                                                           |
|                |                             | Metal Fixture                      | Iron, stainless, aluminum, etc.                                                                                                                                                                              |
|                |                             | Others                             | Please consult us about chemical substances which are prohibited to use or the regulation of content amount.                                                                                                 |
| Fluid          | Fluid Type                  |                                    | Liquid (water, oil, chemical), gas, powder, etc.                                                                                                                                                             |
|                | Concentration               |                                    | Concentration (%) of chemicals, etc.<br>pH of acid or alkali.                                                                                                                                                |
|                | Specific Gravity            |                                    | Specific gravity, density (g/cm <sup>3</sup> , kg/cm <sup>3</sup> ) of fluid.                                                                                                                                |
|                | Temperature                 |                                    | Fluid temperature (°C)                                                                                                                                                                                       |
|                | Flow Volume, Flow Rate      |                                    | m <sup>3</sup> /hour, L/hour, m/second                                                                                                                                                                       |
|                | Use Conditions              |                                    |                                                                                                                                                                                                              |
| Use Conditions | Pressure                    | Maximum Working Pressure           | Delivery: MPa (kgf/cm <sup>2</sup> )<br>Suction: -kPa (-mmHg, -mmAq)                                                                                                                                         |
|                |                             | Peak Pressure                      | Pump maximum pressure<br>Assumed impact pressure                                                                                                                                                             |
|                |                             | Vertical Interval                  | Vertical interval of plumbing                                                                                                                                                                                |
|                | Surrounding Environment     | Outside Air Temperature            | °C                                                                                                                                                                                                           |
|                |                             | Place of Use                       | Outdoor, indoor, under water, at sea, in soil, etc.                                                                                                                                                          |
|                |                             | External Pressure                  | MPa (kgf/cm <sup>2</sup> )                                                                                                                                                                                   |
|                | Installing Method           | Conditions of Installation         | Plumbing drawing, performance drawing, plumb by slinging or on a floor, etc.                                                                                                                                 |
|                |                             | Bending Radius in Use              | Use hoses bent with bending radius or more.                                                                                                                                                                  |
|                |                             | Operating Cycle                    | Repeated bending cycle, etc.                                                                                                                                                                                 |
| Storage        | Duration of Use             |                                    | Duration of use (consecutively or continuously)                                                                                                                                                              |
|                | Storage Conditions          |                                    | Storage period.<br>Storage environment (outdoor, indoor, ambient temperature).                                                                                                                               |
| Regulations    | Applicable Law and Standard |                                    |                                                                                                                                                                                                              |
| Performance    | Past Use History            |                                    | Manufacturer's name, item name, duration of use, etc.                                                                                                                                                        |

\* Please consult us after sufficient confirmation through above content.